RIT

Preparing you for an

outstanding educational experience

Undergraduate Bulletin
2023-24

Rochester Institute of Technology
2023-24 Academic Calendar

† The Add/Drop period is the first seven class days of the fall, spring, and full summer terms, excluding Sundays and holidays.

* Tentative spring semester and summer term schedule. RIT reserves the right to update the spring and summer schedule.

RIT does not discriminate. RIT's Nondiscrimination Notice can be found here: **rit.edu/nondiscrimination**

Any person with a concern about the university's handling of a particular matter related to sex or gender-based discrimination or harassment should contact:

Stacy DeRooy, Director of Title IX and Clery Compliance, Title IX Coordinator, 171 Lomb Memorial Drive, Rochester, NY 14623, 585-475-7158, Stacy.DeRooy@rit.edu, www.rit.edu/titleix

Fall Semester (2231)

August 28
Day, evening, and online classes begin
First day of Add/Drop period †

September 2
Saturday classes begin

September 4
Labor Day – No Classes

September 5
Last day of Add/Drop period †

September 6
First day to drop from classes with a grade of "W"

October 9-11
Fall Break – No Classes

November 10
Last day to drop from classes with a grade of "W"

November 22
No Classes
University closes at 2pm

November 23-24
Thanksgiving Holiday
University closed

December 11
Last day, evening, and online classes

December 12
Reading Day

December 13, 14, 15, 18, 19, 20
Final Exams

December 22
Final Grades Due

December 23–January 15
Break between fall and spring semesters

Spring Semester (2235)

January 15, 2024
Martin Luther King Jr. Day – No Classes

January 16
Day, evening, and online classes begin
First day of Add/Drop period †

January 20
Saturday classes begin

January 23
Last day of Add/Drop period †

January 24
First day to drop from classes with a grade of "W"

March 10-17
Spring Break – No Classes

April 5
Last day to drop from classes with a grade of "W"

April 29
Last day, evening, and online classes

April 30
Reading Day

May 1, 2, 3, 6, 7, 8
Final Exams

May 10
Final grades due

May 10-11
Convocation and Commencement Ceremonies

May 12-15
Break between spring semester and summer term

12-week Summer Term (2238)

May 15
Day, evening, and online classes begin
First day of Add/Drop period †

May 18
Saturday classes begin

May 22
Last day to Add/Drop classes †

May 23
First day to drop from classes with a grade of "W"

May 27
Memorial Day – No Classes
University closed

June 19
Juneteenth observed – No Classes

July 4
Independence Day observed
University closed

July 24
Last day to drop from classes with a grade of "W"

August 7
Last day, evening, and online classes

August 8
Reading Day

August 9, 12, 13
Final exams

August 15
Final grades due

August 16-25
Break between summer term and fall semester

Short Session I Summer Term (2238)

May 15
Day, evening, and online classes begin
First day of Add/Drop period †

May 20
Last day to Add/Drop classes †

May 21
First day to drop from classes with a grade of "W"

May 27
Memorial Day (no classes)
University closed

June 19
Juneteenth observed – No Classes

June 20
Last day to drop from classes with a grade of "W"

June 26
Last day of classes

June 27, 28, 29
Final exams

July 1
Final grades due

Short Session II Summer Term (2238)

July 1
Day, evening, and online classes begin
First day of Add/Drop period †

July 4
Independence Day observed – No Classes
University closed

July 5
Last day to Add/Drop classes †

July 6
First day to drop from classes with a grade of "W"

July 31
Last day to drop from classes with a grade of "W"

August 7
Last day, evening, and online classes

August 8
Reading Day

August 9, 12, 13
Final exams

August 15
Final grades due

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Rochester Institute of Technology

About This Bulletin

This *Undergraduate Bulletin* does not constitute a contract between the university and its students on either a collective or individual basis. It represents RIT's best academic, social, and financial planning at the time of publication. Course and curriculum changes, modifications of tuition, fees, dormitory, meal, and other charges, plus unforeseen changes in other aspects of RIT life, sometimes occur after the *Undergraduate Bulletin* has been printed but before the changes can be incorporated in a later edition of the same publication. Because of this, Rochester Institute of Technology does not assume a contractual obligation with its students for the contents of this *Undergraduate Bulletin*. RIT does not discriminate. RIT promotes and values diversity within its workforce and provides equal opportunity to all qualified individuals regardless of race, color, creed, age, marital status, sex, gender, religion, sexual orientation, gender identity, gender expression, national origin, veteran status, or disability.

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Produced by the Division of Academic Affairs and the Division of Marketing and Communications.

Rochester Institute of Technology
One Lomb Memorial Drive
Rochester, NY 14623
rit.edu
Undergraduate Bulletin 2023-24

An Introduction to Rochester Institute of Technology

Respected internationally as a world leader in career-oriented, technological education, Rochester Institute of Technology has been setting an innovative pace since 1829, when Colonel Nathaniel Rochester became the first president of the Rochester Athenaeum. In 1891, the Athenaeum merged with Mechanics Institute, which had been founded by a group of businessmen to instruct in "drawing and such other branches of studies as are most important for industrial pursuits." In 1944, recognizing the increasingly specialized professional nature of its programs, the university adopted the name it holds today.

A private, coeducational university in upstate New York, RIT offers academic programs that combine outstanding teaching, a strong foundation in the liberal arts and sciences, modern classroom facilities, and work experience gained through the university's cooperative education program, internships, and other opportunities.

Few universities provide RIT's variety of career-oriented studies. Our 11 colleges and degree-granting entities offer outstanding programs in business, engineering, art and design, science and mathematics, the liberal arts, photography, computing, hospitality management, and many other areas.

More than 200 programs—including such distinctive offerings as microelectronic and software engineering, imaging science, film and animation, biotechnology and molecular bioscience, physician assistant, new media, international business, telecommunications, and the programs of RIT's School for American Crafts and National Technical Institute for the Deaf (NTID)—draw students from all 50 states and more than 100 countries.

As a major university, RIT offers academic opportunities that extend far beyond science and technology, including more liberal arts courses and faculty than are found at most liberal arts colleges. With a strong foundation in the humanities and social sciences, RIT graduates understand both technological developments and the larger philosophical and ethical issues presented by technology.

Approximately 16,868 undergraduate students and 2,904 graduate students attend RIT. More than 140,000 alumni can be found around the globe.

RIT is a top 100 national research university. We offer the following degrees: doctoral (Ph.D.) programs in astrophysical sciences and technology, biomedical and chemical engineering, business administration, color science, computing and information sciences, electrical and computer engineering, imaging science, mathematical modeling, mechanical and industrial engineering, microsystems engineering, physics, and sustainability; master's degree programs: master of architecture (M.Arch.), master of business administration (MBA), master of engineering (ME), master of fine arts (MFA), master of science (MS), and master of science for teachers (MST); bachelor's degree programs: bachelor of fine arts (BFA) and bachelor of science (BS); and associate degree programs: AS, AOS, AAS.

RIT's cooperative education program is the fourth-oldest and one of the largest in the world. More than 4,300 students complete co-op positions with approximately 3,400 employers every year. In addition, more than 600 companies visit RIT to conduct employment interviews on campus.

The world in which RIT graduates live and work is composed of people from many backgrounds, lifestyles, and cultures. Therefore, RIT encourages the appreciation of diversity through a variety of liberal arts courses, campus events, and special programs, including the annual International Banquet, Black History Month, Martin Luther King Jr. celebration, and Hispanic Heritage Week.

RIT has been recognized by *U.S. News & World Report* magazine as one of the nation's leading comprehensive universities and one of America's Best College Values. Many college guidebooks have ranked RIT among the nation's top schools, including "Kaplan's Unbiased Guide to the 320 Most Interesting Colleges" and *The Princeton Review's Best 379 Colleges*.

Accreditation

Rochester Institute of Technology is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA 19014, (267) 284-5000. The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation..

In addition to institutional accreditation, many of RIT's academic programs have been granted accreditation by appropriate professional accreditation bodies. Where applicable, specific mention of accreditation is included in program descriptions. Students wishing to review documents describing accreditation should contact the Office of the Senior Vice President for Academic Affairs.

Academic Programs of Study (HEGIS chart)

Undergraduate Programs of Study		Degree and HEGIS Code						
		Cert.	Diploma	AOS	AS	AAS	BFA	BS
Art, Design, and Architecture								
3D Digital Design	Art and Design						1009	
3D Graphics Technology	National Technical Institute for the Deaf					5012.00		
Civil Technology	National Technical Institute for the Deaf					5309		
Design and Imaging Technology	National Technical Institute for the Deaf			5012		5012		
Furniture Design	Art and Design			5610.00				
Graphic Design	Art and Design						1009	
Humanities, Computing, and Design	Liberal Arts							4903.00
Illustration	Art and Design						1002	
Industrial Design*	Art and Design						1009	
Interior Design*	Art and Design						1009	
Medical Illustration	Health Sciences and Technology						1299	
New Media Design	Art and Design						0605	
Print and Graphic Media Technology*	Art and Design							0699
Studio Arts	Art and Design						1002.00	
Business, Management, and Leadership								
Accounting*	Business							0502
Accounting Technology	National Technical Institute for the Deaf					5002		
Administrative Support Technology	National Technical Institute for the Deaf					5005		
Business Administration‡	National Technical Institute for the Deaf					5001.00		
Business Administration	National Technical Institute for the Deaf					5001.00		
Business	National Technical Institute for the Deaf				5001			
Business Technology	National Technical Institute for the Deaf			5004				
Community Development and Inclusive Leadership	National Technical Institute for the Deaf							2101.00
Economics*	Liberal Arts							2204
Finance	Business							0504
Global Business Management	Business							0506
Health Systems Administration‡	Health Sciences and Technology	5299.00						
Hospitality and Tourism Management	Business							0510.10
Management Information Systems (MIS)	Business							0599
Marketing	Business							0509
Organizational Change and Leadership‡	School of Individualized Study	5004.00						
Supply Chain Management	Business							0509.00
Communications and Digital Media								
3D Graphics Technology	National Technical Institute for the Deaf					5012.00		
Advertising and Public Relations*	Liberal Arts							0604
ASL-English Interpretation	National Technical Institute for the Deaf							1199
Communication*	Liberal Arts							0601
Graphic Design	Art and Design						1009	
Humanities, Computing, and Design	Liberal Arts							4903.00
Journalism*	Liberal Arts							0604
New Media Design	Art and Design						0605	
New Media Interactive Development	Computing and Information Sciences							0699
Print and Graphic Media Technology*	Engineering Technology							0699
Computing and Information Sciences								
3D Digital Design	Art and Design						1009	
3D Graphics Technology	National Technical Institute for the Deaf					5012.00		
Applied Computer Technology	National Technical Institute for the Deaf			5101	0799	5101		
Bioinformatics and Computational Biology*	Science							0499
Computational Mathematics*	Science							1703
Computer Engineering*	Engineering							0999
Computer Engineering Technology*	Engineering Technology							0925
Computer Science*	Computing and Information Sciences							0701
Computing and Information Technologies	Computing and Information Sciences							0702
Cybersecurity*	Computing and Information Sciences	0799						0799
Game Design and Development*	Computing and Information Sciences							0799
Human-Centered Computing	Computing and Information Sciences							4605.00
Humanities, Computing, and Design	Liberal Arts							4903.00
Imaging Science	Science							1999.20
Management Information Systems (MIS)	Business							0599
Mobile Application Development	National Technical Institute for the Deaf					5101		
New Media Design	Art and Design						0605	
New Media Interactive Development	Computing and Information Sciences							0699
Print and Graphic Media Technology*	Engineering Technology							0699
Software Engineering*	Computing and Information Sciences							0999
Web and Mobile Computing	Computing and Information Sciences							0699

* Combined Accelerated Bachelor's/Master's degree available.
† Evening option available.
‡ Online option available.

Undergraduate Programs of Study		Degree and HEGIS Code						
		Cert.	Diploma	AOS	AS	AAS	BFA	BS
Engineering and Engineering Technology								
Applied Mechanical Technology	National Technical Institute for the Deaf					5315		
Architectural and Civil Drafting Technology	National Technical Institute for the Deaf			5303		5303		
Biomedical Engineering*	Engineering							0905
Chemical Engineering*	Engineering							0906
Civil Engineering Technology	Engineering Technology							0925
Civil Technology	National Technical Institute for the Deaf					5309		
Computer Engineering*	Engineering							0999
Computer Engineering Technology*	Engineering Technology							0925
Electrical Engineering*	Engineering							0909
Electrical Engineering Technology	Engineering Technology							0925
Environmental Sustainability, Health and Safety*	Engineering Technology							0420
Imaging Science	Science							1999.20
Industrial Engineering*	Engineering							0913
Integrated Electronics	Engineering	5311.00						
Mechanical Engineering*	Engineering							0910
Mechanical Engineering Technology*	Engineering Technology							0925
Mechatronics Engineering Technology*	Engineering Technology							0925.00
Microelectronic Engineering*	Engineering							0999
Packaging Science*	Engineering Technology							4999
Precision Manufacturing Technology	National Technical Institute for the Deaf			5312				
Robotics and Manufacturing Engineering Technology*	Engineering Technology							0925
Software Engineering*	Computing and Information Sciences							0999
Environmental Studies and Sustainability								
Civil Engineering Technology	Engineering Technology							0925
Environmental Science*	Science							0420
Environmental Sustainability, Health and Safety*	Engineering Technology							0420
Packaging Science*	Engineering Technology							4999
Game Design, Development, and Arts								
3D Digital Design	Art and Design						1009	
Film and Animation	Art and Design						1010	
Game Design and Development*	Computing and Information Sciences							0799
Humanities, Computing, and Design	Liberal Arts							
Illustration	Art and Design						1002	
New Media Design	Art and Design						0605	
New Media Interactive Development	Computing and Information Sciences							0699
Web and Mobile Computing	Computing and Information Sciences							0699
Health Professions and Medical Sciences								
Biochemistry	Science							0414
Bioinformatics and Computational Biology*	Science							0499
Biology*	Science							0401
Biomedical Engineering*	Engineering							0905
Biomedical Sciences*	Health Sciences and Technology							0499
Biotechnology and Molecular Bioscience*	Science							0499
Chemistry*	Science							1905
Diagnostic Medical Sonography (Ultrasound)	Health Sciences and Technology	5299						1299
Echocardiography (Cardiac Ultrasound)	Health Sciences and Technology	5217						
Exercise Science	Health Sciences and Technology	5299.30						1299.30
General Science	National Technical Institute for the Deaf				5604.00			
Health Systems Administration‡	Health Sciences and Technology	5299.00						
Medical Illustration	Health Sciences and Technology						1299	
Nutritional Sciences*	Health Sciences and Technology							1306.00
Physician Assistant†	Health Sciences and Technology							1299.10
Humanities, Social Sciences, and Education								
Advertising and Public Relations*	Liberal Arts							0604
Applied Arts and Sciences‡	School of Individualized Study		5699			5699		
Applied Liberal Arts	Liberal Arts				5699			
Applied Modern Language and Culture	Liberal Arts							1101.00
ASL-English Interpretation	National Technical Institute for the Deaf							1199
Community Development and Inclusive Leadership	National Technical Institute for the Deaf							2101.00
Criminal Justice*	Liberal Arts							2105
Deaf Cultural Studies-American Sign Language	National Technical Institute for the Deaf	5506.00						
Economics*	Liberal Arts							2204
English	Liberal Arts							1501.00
History*	Liberal Arts							2205.00
Human-Centered Computing	Computing and Information Sciences							4605.00
Humanities, Computing, and Design	Liberal Arts							4903.00
Individualized Program‡	School of Individualized Study							4999
International and Global Studies*	Liberal Arts							2210
Journalism*	Liberal Arts							0604

* Combined Accelerated Bachelor's/Master's degree available.
† Evening option available.
‡ Online option available.

Undergraduate Programs of Study		Degree and HEGIS Code						
		Cert.	Diploma	AOS	AS	AAS	BFA	BS
Museum Studies	Liberal Arts							1099
Neuroscience	Science							0425
Performing Arts	National Technical Institute for the Deaf	5610.00						
Philosophy*	Liberal Arts							1509
Political Science*	Liberal Arts							2207
Psychology*	Liberal Arts							2001
Sociology and Anthropology*	Liberal Arts							2214
Women's, Gender, and Sexuality Studies	Liberal Arts							4903.00
Photography, Film, and Animation								
Film and Animation	Art and Design						1010	
Imaging Science	Science							1999.20
Motion Picture Science	Art and Design							1010
Photographic and Imaging Arts	Art and Design						1011	
Photographic Sciences	Art and Design							1901.00
Science and Math								
Applied Mathematics*	Science							1703
Applied Statistics and Data Analytics*	Science							1702
Biochemistry	Science							0414
Bioinformatics and Computational Biology*	Science							0499
Biology*	Science							0401
Biomedical Engineering*	Engineering							0905
Biomedical Sciences*	Health Sciences and Technology							0499
Biotechnology and Molecular Bioscience*	Science							0499
Chemistry*	Science							1905
Computational Mathematics*	Science							1703
Environmental Science*								0420
General Science	National Technical Institute for the Deaf				5604.00			
Imaging Science	Science							1999.20
Laboratory Science Technology	National Technical Institute for the Deaf			5407		5407		
Motion Picture Science	Art and Design							1010
Neuroscience								0425
Photographic Sciences	Art and Design							1901.00
Physics*	Science							1902
Undeclared and Individualized Study								
Applied Arts and Sciences‡	School of Individualized Study					5699		
Applied Arts and Sciences	School of Individualized Study							
Individualized Program‡								4999

* Combined Accelerated Bachelor's/Master's degree available.
† Evening option available.
‡ Online option available.

Colleges of RIT

RIT enrolls more than 19,000 full-time and part-time students in 10 colleges and schools on our main campus in Henrietta, N.Y. An additional 2,400 students are enrolled at RIT's global campuses in China, Croatia, Dubai, and Kosovo.

RIT's Colleges and Schools

- College of Art and Design
- Saunders College of Business
- Golisano College of Computing and Information Sciences
- Kate Gleason College of Engineering
- College of Engineering Technology
- College of Health Sciences and Technology
- School of Individualized Study/University Studies
- College of Liberal Arts
- National Technical Institute for the Deaf
- College of Science

College of Art and Design

Todd Jokl, Dean
www.rit.edu/artdesign/

Programs of Study

The College of Art and Design includes the schools of American Crafts, Art, Design, Film and Animation, and Photographic Arts and Sciences.

Please visit the college's website–**www.rit.edu/artdesign**–for in depth information on academics, admisisons, financial aid and scholarships, faculty, facilities, research initiatives, advising services, and more.

Accreditation

The National Association of Schools of Art and Design (NASAD) accredits the BFA programs in the schools of American Crafts, Art, Design, Film and Animation, and Photographic Arts and Sciences. The School of Design's interior design program is accredited by the Council for Interior Design Education Accreditation.

3D Digital Design, BFA

www.rit.edu/study/3d-digital-design-bfa
Shaun Foster, Professor
585-475-7124, scffaa@rit.edu

Program overview

3D digital designers use their passion to create virtual elements featured in everything from games and movies to visualizations and augmented reality. On your first day in the program, you begin learning and using the same software that professionals use in related fields. Our multi-disciplinary approach provides ample opportunity to collaborate with engineers, musicians, scientists, animators, and medical professionals and put your 3D design abilities to use while you are at RIT, and be prepared for the real-world when you graduate.

RIT's 3D Digital Design Degree

From day one of our 3D digital design degree, you'll begin learning the design software professionals use for real-world digital design. You will also have the opportunity to collaborate with engineers, musicians, scientists, animators, and medical professionals, putting your 3D design abilities to use before you even graduate.

Traditional 3d digital arts skills are augmented with principles of time, motion, lighting, rendering, and compositing to create inspiring projects. In addition to the 3D software, students learn:

- Motion and facial capture
- Projection mapping
- 3D printing

Enhance Your 3D Digital Arts Major

You can choose from two focused degree options:

- The **game arts option** centers on the creation of visual elements and assets for a wide range of game platforms. This option allows you to pursue creative interests in game arts, from designing virtual elements and lighting to animated characters and backgrounds.
- The **3D visualization option** gives you the flexibility to pursue a broad range of applications that use digital design as the platform for 3D content creation. This option emphasizes the creation and simulation of environments and objects for virtual spaces for a growing number of real-world opportunities.

Connect with Design Industry Leaders

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Furthering Your Education in 3D Digital Design

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart.

Co-ops and internships take your knowledge and turn it into know-how. Your art and design co-ops will provide hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Students in the digital arts BFA are strongly encouraged to complete a cooperative education or internship experience.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

3D Digital Design, BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: Survey: Ancient to Medieval Art	3
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern Art	3
DDDD-101	Introduction to Modeling and Motion	3
DDDD-102	Introduction to Visual Design	3
DDDD-103	Imaging for 3D	3
FDTN-131	3D Design I	3
FDTN-141	4D Design	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Second Year		
DDDD-201	Modeling and Motion Strategies	3
DDDD-202	Layers and Effects	3
DDDD-203	Scripting	3
DDDD-209	Project Planning and Production	3
DDDD-207	Lighting, Materials, and Rendering	3
DDDD-208	Anatomical Figure Drawing	3
FDTN-121	2D Design I	3
	General Education – Ethical Perspective	3
	General Education – Social Perspective	3
	Programming Elective	3
Third Year		
DDDD-301	Professional Practice (WI-PR)	3
DDDD-302	General Education Elective: History of Digital Graphics (WI-PR)	3
DDDD-303	Collaboration Project	3
DDDD-209	Project Planning and Production	3
	3DDD Professional Electives	6
	Open Electives	6
	General Education – Immersion 1, 2	6
	Art History Elective†	3

COURSE		SEMESTER CREDIT HOURS
Fourth Year		
DDDD-402	Senior Capstone I	3
DDDD-403	Senior Capstone II	3
	3DDD Professional Electives	12
	Open Electives	9
	General Education – Immersion 3	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

3D Digital Design (game arts option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-1##	Any 100-level ARTH course (General Education: Artistic Perspective)	3
ARTH-1##	Any 100-level ARTH course (General Education: Global Perspective)	3
DDDD-101	Introduction to Modeling and Motion	3
DDDD-102	Introduction to Visual Design	3
DDDD-103	Imaging for 3D	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
FDTN-141	4D Design	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Second Year		
DDDD-201	Modeling and Motion Strategies	3
DDDD-202	Layers and Effects	3
DDDD-203	Scripting	3
DDDD-209	Project Planning and Production	3
DDDD-207	Lighting, Materials, and Rendering	3
Choose one of the following:		3
DDDD-208	Anatomical Figure Drawing	
ILLS-219	Digital Illustration I	
	General Education – Ethical Perspective	
	General Education – Social Perspective	
	Art History Elective	
Third Year		
DDDD-301	Professional Practice (WI-PR)	3
GAMA-301	The History of Game Arts	3
GAMA-302	Contemporary Practices: Technology in Game Arts	1
IGME-320	Game design adn development II	3
IGME-580	IGM Production Studio	3
	Open Electives	3
	Game Arts Electives	6
	General Education Elective	3
	General Education – Immersion 1, 2	6
Fourth Year		
DDDD-402	Senior Capstone I	3
DDDD-403	Senior Capstone II	3
GAMA-302	Comtemporary Practices: Technology in Game Arts	1
	Game Arts Electives	6
	Open Electives	12
	General Education – Immersion 3	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

3D Digital Design (3D visualization option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-1##	Any 100-level ARTH course (General Education: Artistic Perspective)	3
ARTH-1##	Any 100-level ARTH course (General Education: Global Perspective)	3
DDDD-101	Introduction to Modeling and Motion	3
DDDD-102	Introduction to Visual Design	3
DDDD-103	Imaging for 3D	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
FDTN-141	4D Design	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Second Year		
DDDD-201	Modeling and Motion Strategies	3
DDDD-202	Layers and Effects	3
DDDD-203	Scripting	3
DDDD-209	Project Planning and Production	3
DDDD-207	Lighting, Materials, and Rendering	3
DDDD-208	Anatomical Figure Drawing	3
	General Education – Ethical Perspective	3
	General Education – Social Perspective	3
	CAD Elective	3
	Programming Elective	3
Third Year		
DDDD-301	Professional Practice (WI-PR)	3
DDDD-302	General Education Elective: The History of Digital Graphics (WI-PR)	3
DDDD-303	Collaboration Project	3
	Open Electives	6
	3DDD Professional Electives	6
	Art History Elective	3
	General Education – Immersion 1, 2	6
Fourth Year		
DDDD-402	Senior Capstone I	3
DDDD-403	Senior Capstone II	3
	3DDD Professional Electives	12
	Open Electives	9
	General Education – Immersion 3	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

Electives

3DDD Professional Electives

COURSE	
DDDD-516	Advanced Studio: Topic
DDDD-517	Experimental Workshop
DDDD-521	Character Design and Rigging
DDDD-522	Environment Design
DDDD-523	Hard Surface Design
DDDD-526	Physical Interface Design
DDDD-527	Real Time Design
DDDD-528	Simulating Natural Phenomena

Programming Electives

COURSE	
CMPR-271	Computational Problem Solving for Engineers
CSCI-140	Computer Science for AP Students
CSCI-141	Computer Science I
IGME-101	New Media Interactive Design and Algorithmic Problem Solving I
IGME-105	Game Development and Algorithmic Problem Solving I

COURSE	
ISCH-110	Principles of Computing
ISTE-100	Computational Problem Solving in Network Domain I
ISTE-120	Computational Problem Solving in the Information Domain I

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Transfer Admission

Transfer course recommendations without associate degree

Courses in studio art, art history, and liberal arts. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Related programs or studio art experience in desired disciplines. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information. Summer courses can lead to third-year status in most programs.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Art Exploration

www.rit.edu/study/art-exploration
Elizabeth Kronfield, Professor
585-475-5762, edkfaa@rit.edu

Program overview

If you want to pursue studio arts but are unsure which major or program option best matches your interests, the studio art exploration option is for you. (This program was formerly know as art exploration.)

The School of Art offers majors in:

- illustration
- medical illustration
- studio arts, where you can choose an option in ceramics, expanded forms, furniture design, glass,metals and jewelry design, painting, printmaking, or sculpture.

In your first year, you will work closely with your academic advisor to select courses that best align with your career aspirations.

The art exploration option requires the submission of a portfolio. View our Portfolio Requirements for more information.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Design Exploration

www.rit.edu/study/design-exploration
Peter Byrne, Professor
585-475-6107, pjbfaa@rit.edu

Program overview

Design exploration is not accepting applications at this time. However, we encourage you to explore the design majors in RIT's School of Design, which include 3D digital design, graphic design, industrial design, interior design, and new media design.
If you are passionate about design but are unsure which program best fits your career aspirations the design exploration option is for you. RIT's School of Design offers majors in 3D digital design, graphic design, industrial design, interior design, and new media design. In the first year, students will work closely with their academic advisor to select courses that best match their interests.

The design exploration option requires the submission of a portfolio. View our Portfolio Requirements for more information.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Film and Animation, BFA

www.rit.edu/study/film-and-animation-bfa
Brian Larson, Animation Director
Jack Beck, Production Director

Program overview

The film and animation major is for students who recognize the moving image as an expressive force uniquely important to modern life. As a bachelor of fine arts student, you have two options to choose from to pursue your craft. The animation degree path focuses on 2D, 3D, and stop motion animation spanning from conception to application to final production of short films. The film degree path focuses on production through visual and sound artistry utilizing hands-on experience with camera, editing, and sound equipment. The major ultimately develops students' production skills and promotes film and animation as creative media.

Plan of Study

The curriculum emphasizes production, with students beginning their first year working in 16mm film, digital HD video, and animation. Production work continues in every semester. Students may choose one of two options: animation or production. The major prepares students to produce, creatively and practically, their own independent work and/or fulfill professional production responsibilities in any medium suitable to their interests and abilities.

Through lectures and laboratories, students develop individual skills in moving-image communications and learn the aesthetic principles governing art. Technology and technique are never taught as an end in themselves but in terms of learning to use the tools necessary to achieve a creative goal in relation to the audience.

Students produce several short films in either live-action or animation by working through all phases of production, from scripting, production planning, and budgeting to shooting, designing, animating, editing, and sound design. Students further their learning of visual and sound artistry through hands-on experience with camera and sound equipment. Film, video, and animation projects are designed by individual students. A wide variety of styles and intentions is expressed in the department's work.

Utilizing research, critical thinking, creativity, and a range of problem-solving principles, students are taught to address complex motion imaging workflow issues within the constraints of time, space, budget, and technology. Upon graduation, students enjoy a variety of career opportunities within feature film and television production.

Study Filmmaking in LA

Study Away: LA gives film and animation majors the opportunity to spend a semester in Los Angeles learning from industry professionals. The bulk of your time will be spent at internships, but you'll also complete two courses that will complement your study-away experience. Learn more about Study Away: LA and how you can gain industry experience in traditional filmmaking, animation, or cutting-edge areas like virtual production in Los Angeles, the epicenter of the global entertainment universe.

Interested in a Career in Game Arts?

We've got you covered. The film and animation major allows you to explore your creative interests related to video games. You'll have endless opportunities to collaborate with developers and fellow artists on game and digital media projects. Film and animation alumni have gone on to

establish successful careers as game artists. Learn how you can use the film and animation major to launch a career in game arts.

Memberships

The school maintains memberships in a number of professional organizations, including: Animation World Network, College Art Association, Rochester Audio Visual Association, Society of Motion Picture and Television Engineers, University Film and Video Association, Siggraph, and BEA.

Summer Session

The School of Film and Animation offers a limited selection of courses during the summer term. These range from beginning courses to those requiring a substantial background. For information on summer workshops, please contact the school.

Combined Accelerated Bachelor's/Master's Degree

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Co-op in the College of Art and Design provides hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education, internships, and other experiential learning opportunities are strongly encouraged for students in the BFA in film and animation.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Film and Animation (animation option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
ARTH-124	General Education – Global Perspective: Survey: Themes in the History of Art	
ARTH-135	General Education -- Global Perspective: Survey: Ancient to Medieval Art	
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern Art	
ARTH-137	General Education – Global Perspective: Survey: Arts of the Ancient Americas	
SOFA-101	Production	3
SOFA-107	Principles of Animation	3
SOFA-121	General Education – Artistic Perspective: Animation I	3
SOFA-122	Fundamentals of Computers and Imaging Technology	3
SOFA-131	Film History and Theory I	3
YOPS-10	RIT 365: RIT Connections	0
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
SOFA-108	Drawing for Animation (2D)	
SOFA-209	Introduction to 3D Modeling (3D)	
	General Education – First-Year Writing (WI)	3
Second Year		
SOFA-205	Basic Sound Recording	3
SOFA-217	Animation Production Workshop I	4
SOFA-228	Animation Scriptwriting and Storyboard (WI-PR)	3
SOFA-541	History and Aesthetics of Animation (WI-PR)	3
Choose one of the following:		3
SOFA-203	2D Animation I (2D)	
SOFA-215	3D Animation I (3D)	
SOFA-522	Stop Motion Puppet Fundamentals	
Choose one of the following:		3
SOFA-224	2D Digital Animation (2D)	
SOFA-226	Advanced 3D Modeling (3D)	
Choose one of the following:		3
SOFA-216	3D Animation II (3D)	
SOFA-218	Concept and Character Design (2D)	
SOFA-533	Advanced Stop Motion Techniques	
	Open Elective	3
	General Education – Ethical Perspective	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Third Year		
SOFA-303	Animation Production Workshop II	6
SOFA-518	Business and Careers in Animation	3
Choose one of the following:		3
SOFA-323	2D Animation II: Performance	
SOFA-582	Alternative Frame By Frame	
	CAD Elective‡	
Choose one of the following:		3
SOFA-575	3D Lighting and Rendering	
	CAD Elective‡	
	Professional Electives	6
	General Education – Social Perspective	3
	General Education – Immersion 1	3
	Open Elective	3
Fourth Year		
Choose one of the following:		3
SOFA-411	Animation Capstone I	
	CAD Elective‡	
Choose one of the following:		3
SOFA-411	Animation Capstone I	
SOFA-412	Animation Capstone II	
	CAD Elective‡	
	History and Aesthetics Elective	3
	Open Electives	9
	General Education – Immersion 2, 3	6
	CAD Elective‡	3
	General Education - Elective	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ CAD Elective - any College of Art and Design course.

Electives

History and Aesthetics Electives

COURSE	
ARTH-###	Any "ARTH" undergraduate course
PHAR-211	Histories and Aesthetics of Photography I
PHAR-212	Histories and Aesthetics of Photography II
SOFA-511	Film Sound Theory: Music
SOFA-512	Film Sound Theory: Effects
SOFA-513	Film Sound Theory: Voice
SOFA-561	New Documentary Issues
SOFA-562	Film History
SOFA-566	Documentary Film History
IDEA-242	Comics: Image & Text in Popular Culture

Professional Electives

COURSE	
ENGL-386	World Building Workshop
ILLS-468	Fantastic Illustration
ILLS-472	Sketchbook Illustration
SOFA-221	After Effects for Animators
SOFA-225	Performance Resources for Animation
SOFA-263	Virtual Production II
SOFA-516	Virtual Production I
SOFA-529	Experimental Animation
SOFA-531	Digital Effects & Compositing
SOFA-556	Transformative Trends in Entertainment
SOFA-557	Chasing Rainbows: Entertainment Distribution
SOFA-581	Particles & Dynamics
SOFA-583	Building the 3D Character
SOFA-586	Programming for 3D Animators

Film and Animation (production option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Global Perspective: Survey: Ancient to Medieval Art	3
ARTH-136	General Education – Elective: Survey: Renaissance to Modern Art	3
SOFA-101	Production	3
SOFA-105	Documentary Field Practices	4
SOFA-112	Fundamentals of Screenwriting	3
SOFA-121	General Education – Artistic Perspective: Animation I	3
SOFA-122	Fundamentals of Computers and Imaging Technology	3
SOFA-131	Film History and Theory I	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Ethical Perspective	3
Second Year		
SOFA-502	Production Processes	6
SOFA-205	Basic Sound Recording	3
SOFA-206	Directing	3
SOFA-208	Dramatic Structure (WI-PR)	3
Choose one of the following:†		4
SOFA-211	Documentary Workshop	
SOFA-212	Fiction Workshop	
SOFA-213	Radical Cinema Workshop	
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
SOFA-214	Fundamentals of Editing	3
	CAD Elective‡	3
	General Education – Social Perspective	3
Third Year		
SOFA-306	Senior Capstone Seminar	1
SOFA-514	Business and Careers in Film	3
	History and Aesthetics Electives	3
	CAD Electives‡	6
	SOFA Craft Choice§	6
	Open Electives	6
	General Education – Immersion 1 (WI-GE)	3
Fourth Year		
SOFA-416	Production Capstone I	4
SOFA-417	Production Capstone II	4
	Open Electives	9
	General Education – Immersion 2, 3	6
	CAD Elective‡	3
	History and Aesthetics Elective	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† SOFA production workshop courses include Documentary Workshop (SOFA-211), Fiction Workshop (SOFA-212), and Radical Cinema Workshop (SOFA-213). Students must complete two production workshops over the course of three semesters, starting in the spring of the second year and ending in the spring of the third year. Once the student has completed two different workshops, courses may be repeated for credit.
‡ CAD Elective - any College of Art and Design course.
§ SOFA craft choice courses include Advanced Sound Recording (SOFA-521), Advanced Editing (SOFA-523), Advanced Directing (SOFA-524), Writing the Short (SOFA-526), Advanced Cinematography I (SOFA-578).

Electives

History and Aesthetics Electives

COURSE	
ARTH-###	Any "ARTH" undergraduate course
ANTH-310	African Film
ANTH-430	Visual Anthropology
MLFR-352	The French Heritage in Films
PHAR-211	Histories and Aesthetics of Photography I
PHAR-212	Histories and Aesthetics of Photography II
SOFA-511	Film Sound Theory: Music
SOFA-512	Film Sound Theory: Effects
SOFA-513	Film Sound Theory: Voice
SOFA-541	History and Aesthetics of Animation
SOFA-561	New Documentary Issues
SOFA-562	Film History
SOFA-566	Documentary Film History
VISL-373	American Film Since the Sixties

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- A portfolio of expressive, original work must be submitted. View Portfolio Requirements for more information.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, science, design, drawing, and film, video, or animation.

Appropriate associate degree programs for transfer

Transfer as a third-year student is uncommon, as comparable programs are not generally available at other colleges.

Portfolio Guidelines

Specific instructions on portfolio submission for applicants to the film and animation major are available on the college website. The review committee is looking for work that is original in concept and content. It does not necessarily need to be motion media, but should be visual or aural. Examples include films/videos, photos, drawings, paintings,

sculpture, stop-motion puppets, scripts, creative writing, storyboards, and original music.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Furniture Design, AOS

www.rit.edu/study/furniture-design-aos
Andy Buck, Professor
aabsac@rit.edu

Program overview

An intensive course of study combining foundations in art and design with two years of study in woodworking and furniture design. For individuals not seeking the BFA or MFA degree, the associate degree will provide you with many of the fundamentals to begin a career in woodworking and furniture design.

The AOS degree in furniture design is a highly-focused, two-year course of study. Students learn how to use and care for basic hand tools and begin to explore the technical and visual potential of wood. Over the two-year experience, increasingly sophisticated techniques and design concepts are introduced. Students complete courses in two-dimensional design, three-dimensional design, freehand drawing, technical drawing, furniture history, and crafts business practices.

Curriculum

Furniture Design, AOS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CWFD-213	Introduction to Woodworking and Furniture Design	3
CWFD-124	Woodworking / Furniture Design Studio Survey	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
FDTN-141	4D Design	3
STAR-503	CAD Drawing	3
YOPS-10	YOPS-10 RIT 365: RIT Connections	0
	CAD Studio Electives†	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
Second Year		
CWFD-506	Furniture Design: Table Design and Construction	3
CWFD-507	Furniture Design: Bench Design and Construction	3
CWFD-511	Furniture Design: Wood Carving	3
CWFD-512	Furniture Design: Box and Cabinet Design and Construction	3
STAR-311	Ideation and Series	3
STAR-411	Business Practices for Artists (WI-PR)	3
STAR-401	Senior Capstone	3
	Art History Electives*	6
	CAD Studio Electives†	3
Total Semester Credit Hours		**60**

Please see Wellness Education Requirement for more information. Students completing Associate's degrees are required to complete one Wellness course.
* Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.
† CAD Studio Electives are any College of Art and Design course with a lab or studio component.

Graphic Design, BFA

www.rit.edu/study/graphic-design-bfa
Carol Fillip, Associate Professor
Carol.Fillip@rit.edu

Program overview

A graphic design degree is perfect for students who eat, breathe, and sleep design, and would like to apply their skills in a hands-on way. In the graphic design major, we have a balance of design thinking, history, theory, conceptual explorations, problem-solving approaches and strategies, applied projects, and technical development. It all enables our students to create innovative and effective design solutions.

Graphic design is used in everything from branding and identity, books and magazines, advertising, packaging, web and interface design, motion graphics, and just about everything in between.

As an RIT graphic design student, you are exposed to a full range of design topics, including information design, editorial design, environmental design, wayfinding, motion, branding, signage, packaging, interactivity, and UX/UI. We offer collaborative experiences in and out of class that will fully prepare you for internships and co-ops during your studies, and for full-time permanent positions after you graduate. Alumni have worked for companies such as American Girl, Dick's Sporting Goods, Disney, ESPN, Google, L.L. Bean, Mattel, Nickelodeon, Nike, Procter & Gamble, and Sports Illustrated, just to name a few.

Our program excels in digital creation but also maintains a large foothold and mastery of typographic principles and print. Being adept at both digital and print design is highly marketable, preparing you for a large range of jobs in the graphic media industry that represent digital, print, or both, while also having the capacity to see comprehensive design solutions and consistency across multiple media.

Alumni and guest speakers, along with opportunities for internships, co-ops, and freelance experiences, further enhance the program. Additionally, interdisciplinary and collaborative projects within RIT and with outside organizations result in innovative and meaningful hands-on projects that encourage you to explore the social, ethical, and environmental impact of design. You will be well-prepared to pursue positions within design firms, advertising agencies, corporations, and technology companies around the world.

You will also have access to RIT's world-renowned Vignelli Center for Design Studies, the Cary Graphic Design Archive, and the Cary Graphic Arts Collection which enables you to further enhance your learning and inquiry.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your art and design co-ops will provide hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education, internships, and other experiential learning opportunities are strongly encouraged for students in the BFA in graphic design.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Graphic Design, BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-1##	Any 100-level ARTH course (General Education-Artistic Perspective)	3
ARTH-1##	Any 100-level ARTH course (General Education-Global Perspective)	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
GRDE-106	Graphic Design Studio I	3
GRDE-107	Motion Design I	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A	
Second Year		
GRDE-201	Typography I	3
GRDE-202	Graphic Design Studio II	3
GRDE-205	History of Graphic Design (WI-PR)	3
GRDE-206	Typography II	3
GRDE-207	Interactive Design I	3
GRDE-217	Motion Design II	3
	CAD Studio Elective†	3
	Open Elective	3
	General Education – Ethical Perspective	3
	General Education – Social Perspective	3
Third Year		
GRDE-301	Graphic Design Studio III	3
GRDE-302	Interactive Design II	3
GRDE-306	Professional Practices	3
GRDE-307	Design Systems I	3

COURSE		SEMESTER CREDIT HOURS
GRDE-308	Experiential Graphic Design	3
	Art History Elective‡	3
	CAD Studio Elective†	3
	Open Elective	3
	General Education – Immersion 1 (WI), 2	6
Fourth Year		
GRDE-411	Graphic Design Studio IV	3
GRDE-412	Graphic Design Capstone	3
GRDE-421	Design Systems II	3
	Professional Electives	6
	Open Electives	9
	General Education – Immersion	3
	General Education – Elective	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† CAD Studio Elective courses are any College of Art and Design course with a studio or lab component, per catalog restrictions.
‡ Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH; and are 200 level or above.

Electives

Senior Graphic Design History Electives

COURSE	
GRDE-401	Collaborative Design
GRDE-418	Editorial Design
GRDE-422	Interactive Design III
GRDE-423	Typography III
GRDE-428	Advertising Design
GRDE-431	Packaging Systems Collaborative
GRDE-432	Packaging Systems Projects

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Transfer Admission

Transfer course recommendations without associate degree

Courses in studio art, art history, and liberal arts. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Related programs or studio art experience in desired disciplines. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information. Summer courses can lead to third-year status in most programs.

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Illustration, BFA

www.rit.edu/study/illustration-bfa
Chad Grohman, Assistant Professor
clgfaa@rit.edu

Program overview

The illustration degree prepares students for a variety of careers within the visual communications field. The major provides an educational environment that supports the creative development of students and helps them to achieve their individual goals. Course work emphasizes traditional drawing and painting skills, the application of the latest digital media, and the use of dimensional media. Students learn conceptual skills, professional practices, and narrative story telling techniques while developing an individual style. These techniques and styles are then applied to produce illustrations suitable for advertising, publishing, editorial, and the service and gaming/entertainment industries.

Electives

Students may select electives that enhance their studies or allow them to pursue an area of personal or professional interest. Electives are available in graphic design, illustration, graphic visualization, industrial design, interior design, fine arts studio, environmental design, ceramics, glass, metals, textiles, woodworking, film making, photography, and imaging technology. To be eligible for these electives, students must complete the foundation program or have the permission of the instructor. Additional selections are offered as special topics courses.

Interested in a Career in Game Arts?

We've got you covered. The illustration degree allows you to explore your creative interests related to video games. You'll have endless opportunities to collaborate with developers and fellow artists on game and digital media projects. Illustration alumni have gone on to establish successful careers as game artists. Learn how you can use the illustration degree to launch a career in game arts.

Pre-College Portfolio Preparation Workshop

The School of Art's annual Pre-College Portfolio Preparation Workshop is a two-week visual arts class designed to prepare the portfolios of rising high school juniors and seniors for admission to college art programs. Learn more about the Pre-College Portfolio Preparation Workshop, including information on workshop dates and how to apply.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

In the College of Art and Design, experiential learning includes cooperative education and internships, international experiences, multidisciplinary projects, industry partnerships, and more.

Cooperative education, internships, and other experiential learning opportunities are optional but strongly encouraged for graduate students in the BFA in illustration.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Illustration, BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-###	Any 100-level ARTH course (General Education-Artistic Perspective)	3
ARTH-###	Any 100-level ARTH course (General Education-Global Perspective)	3
FDTN-111	Drawing I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
FDTN-121	2D Design I	3
FDTN-122	2D Design II	3
FDTN-131	3D Design I	3
ILLS-209	3D Applications: The Figure	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A	
Second Year		
ILLS-213	Illustration I	3
ILLS-214	Anatomical Illustration	3
ILLS-219	Digital Illustration I	3
ILLS-371	2D/3D Pre-Visual World Building	3
ILLS-550	Topics in Illustration: Character Design	3
	Art History Elective†	3
	CAD Studio Electives‡	6
	General Education – Ethical Perspective	3
	General Education – Social Perspective	3
Third Year		
ILLS-313	Illustration II	3
ILLS-319	Digital Illustration II	3
	Illustration Professional Electives§	9
	CAD Studio Elective‡	3
	Art History Elective†	3
	Open Elective	3
	General Education – Immersion 1 (WI), 2	6
Fourth Year		
ILLS-413	Illustration III	3
ILLS-501	Illustration Portfolio (WI-PR)	3
	Illustration Professional Electives§	6
	CAD Studio Elective‡	3
	Open Electives	9
	General Education – Immersion 3	3
	General Education – Elective	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH; and are 200 level or above.
‡ CAD Studio elective courses are any College of Art and Design course with a studio or lab component, per catalog restrictions.
§ Illustration Professional Electives are ILLS-300-level or higher.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Transfer Admission

Transfer course recommendations without associate degree

Courses in studio art, art history, and liberal arts. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Related programs or studio art experience in desired disciplines. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information. Summer courses can lead to third-year status in most programs.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Industrial Design, BFA

www.rit.edu/study/industrial-design-bfa
Melissa Dawson, Associate Professor
585-475-5647, mdmfaa@rit.edu

Program overview

From thumbtacks to athletic wear and medical equipment to home goods – industrial designers produce products to be used by factories, businesses, and everyday people. The industrial design degree at RIT helps you develop the aesthetic sensitivity, technical competence, and the analytical thought needed to improve the user's experience. You will be able to bring your conceptual ideas to life by developing your technical 2D communications skills and 3D prototyping ability. You will also learn how to formally move your ideas and products to the marketplace.

Industrial design involves the integration of form and function as products are designed and created by combining materials, process, computer-aided design, and human factors. Blending technical instruction with studio assignments, studies also include package, exhibit, and furniture design. Aesthetic sensitivity, technical competence, and analytical thought are developed and applied to meet the challenge of designing products for human needs.

What You'll Study

The industrial design degree integrates major courses, studio and open electives, the liberal arts, and art history electives. Computer skills, design perspectives, career preparation, and exposure to the related areas of publishing, photography, engineering, and information technology are integrated into the curriculum.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

4+2 BFA/M.Arch. Pathway: A BFA degree takes four years to complete and an M.Arch. degree typically takes an additional three to four years. In RIT's 4+2 BFA/M.Arch. Pathway, you'll complete a BFA in industrial design or interior design and then enter the second year of RIT's NAAB-accredited master of architecture degree with advanced standing. Learn how this accelerated pathway enables you to earn a BFA and an M.Arch. degree in as little as six years, saving you time and money.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Professional Organizations

The School of Design maintains memberships in a variety of professional organizations, including Industrial Designers Society of America, ACM Siggraph, Society of Environmental Graphic Designers, American Society of Interior Designers, American Institute of Architects, ICOGRADA, American Institute of Graphic Arts, and International Interior Design Association.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your art and design co-ops will provide hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education, internships, and other experiential learning opportunities are strongly encouraged for students in the BFA in industrial design.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Industrial Design, BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-1##	Any 100-level ARTH course (General Education-Artistic Perspective)	3
ARTH-1##	Any 100-level ARTH course (General Education-Global Perspective)	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-122	2D Design II	
FDTN-222	2D Design II Workshop: Topic	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
IDDE-102	Design Drawing	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A	
Second Year		
IDDE-201	Sophomore ID Studio I	3
IDDE-202	Sophomore ID Studio II	3
IDDE-206	ID Form	3
IDDE-207	ID Digital Drawing	3
IDDE-211	Human Factors Applications	3
IDDE-212	Integrated Computer-Aided Design	3
IDDE-221	History of Industrial Design	3

COURSE		SEMESTER CREDIT HOURS
	General Education – Ethical Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
Third Year		
IDDE-301	Junior ID Studio I	3
IDDE-302	Junior ID Studio II	3
IDDE-306	Materials and Processes	3
IDDE-307	Graphic Tactics	3
IDDE-311	ID Career Planning (WI-PR)	3
	Open Electives	6
	General Education – Immersion 1 (WI), 2	6
	Art History Elective*	3
Fourth Year		
IDDE-406	Professional Practice	3
IDDE-407	ID Senior Capstone I	3
IDDE-408	ID Senior Capstone II	3
IDDE-501	Senior ID Studio I	3
IDDE-502	Senior ID Studio II	3
	Open Electives	9
	General Education - Elective	3
	General Education – Immersion 3	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
* Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH; and are 200 level or above.

Combined Accelerated Bachelor's/Master's Degrees

The industrial design BFA program is part of a 4+2 BFA/M.Arch. Pathway. Learn how this accelerated pathway enables you to earn a BFA and an M.Arch. degree in as little as six years.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Transfer Admission

Transfer course recommendations without associate degree

Courses in studio art, art history, and liberal arts. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Related programs or studio art experience in desired disciplines. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information. Summer courses can lead to third-year status in most programs.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Interior Design, BFA

www.rit.edu/study/interior-design-bfa
Mary Golden, Associate Professor
585-475-7893, megfaa@rit.edu

Program overview

The interior design degree believes in creating contextually appropriate, architecture-centric design solutions grounded in evidence-based design research and human behavior theory. Our goal is to inspire and prepare students to generate holistic, technically creative construction solutions that are not only resilient, adaptable, and sustainable, but purposeful and universally designed.

We are a professional interior design BFA program within a design college, in a technical university affording broader access to allied programs, technology resources, and relationships that push traditional boundaries of interior design education.

From freshman through senior year, you'll be charged with addressing real-world projects in the studio along with peers in collaborative, multidisciplinary teaming activities and in independent studies with research faculty. As a student in the program accredited by the Council for Interior Design Accreditation (CIDA), you'll begin your education with an interdisciplinary Foundations and first-year experience.

The comprehensive interior design curriculum synthesizes the technical and experiential qualities of the built environment with a consciousness for global affairs. Our professionally certified and experienced faculty team mentor you through project-based learning to enhance the human experience with consideration for the health, safety, and welfare of people. In addition to interior design studies and extensive studio electives within the college, you can select a liberal arts immersion offering concentrated areas of study in a unique interest or complementary subject matter relevant to our profession.

Our studio culture is a rigorous, student-centered learning environment with a commitment to celebrating individual capabilities and advancing the program as a collaborative collective. Our enthusiasm for seeing the world through multiples lenses is grounded by curiosity, respectful inquiry, and intellectual discourse. We believe that together we can design a more profoundly meaningful future through the interior environment.

Our Mission

The interior design degree's mission is to educate you to be a designer who contributes to their professions, communicates effectively within your discipline, has a lifelong attitude of inquiry, and makes a positive impact on society. To this end, we promote an innovative educational community that balances expression, imaginative problem solving, aesthetic understanding, professional and environmental responsibility, and creativity.

Educational Philosophy

Our comprehensive interior design major synthesizes design history, building systems, space planning, and design process with a consciousness for global affairs so that students may contribute to the profession with a deep-rooted understanding of society, culture, and the environment. By maximizing an array of academic and professional opportunities, our graduates are reshaping how we live in the world.

Program Goals

1. Explore, challenge, and enhance interior design abilities through problem-solving
2. Demonstrate knowledge of historical, stylistic, theoretical, regional, and cultural design vocabularies
3. Use materials, techniques, and processes used in the built environment with a focus on sustainable design
4. Conduct research and analyze information
5. Introduce design theory, methodology, formal design elements, typology, and necessary technical skills to communicate concepts
6. Examine business practices, regulations, standards, and codes of interior design

Invaluable Resources

Dedicated studio and lecture spaces provide you with the freedom to interact with peers and faculty, fostering teamwork and collaboration. Our active material resource center is akin to the professional office library with "go-to" and specialty products that are managed and updated regularly by manufacturer vendors. RIT's world-renowned Vignelli Center for Design Studies also serves as a vital resource for understanding the process and product of design by some of the world's most acclaimed designers.

Faculty

We have professional faculty who are active in the industry and strive to provide an atmosphere akin to the professional workplace. Our adjuncts are practicing professionals immersed in the subject matters they instruct and extend our reach into the local design community, introducing you to real projects and experiences. Our faculty team is building a studio culture of community and an interior design program focused on excellence, diversity, and pluralism.

Staying Connected

Our illustrious alumni are committed to mentoring students through internship and professional networking activities. Additionally, as an International Interior Design Association (IIDA) Campus Center, we facilitate regular interaction and events with industry professionals.

Professional Memberships

The School of Design maintains memberships in a variety of professional organizations, including Industrial Designers Society of America, ACM Siggraph, Society of Environmental Graphic Designers, American Institute of Architects, ICOGRADA, American Institute of Graphic Arts, and International Interior Design Association.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

4+2 BFA/M.Arch. Pathway: A BFA degree takes four years to complete and an M.Arch. degree typically takes an additional three to four years. In RIT's 4+2 BFA/M.Arch. Pathway, you'll complete a BFA in industrial design or interior design and then enter the second year of RIT's NAAB-accredited master of architecture degree with advanced standing. Learn how this accelerated pathway enables you to earn a BFA and an M.Arch. degree in as little as six years, saving you time and money.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. An art and design co-op provides hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education, internships, and other experiential learning opportunities are encouraged for students in the BFA in interior design.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Interior Design, BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-###	Any 100-level ARTH course (General Education-Artistic Perspective)	3
ARTH-###	Any 100-level ARTH course (General Education-Global Perspective)	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
INDE-101	Introduction to Interior Design I	3
INDE-102	Design Drawing I	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Second Year		
INDE-201	Introduction to Interior Design II	3
INDE-202	Design Drawing II	3
INDE-203	Digital Graphics	3
INDE-207	Color and Lighting Theory	3
INDE-212	Hospitality Design	3
INDE-222	Design Issues (WI-PR)	3
	CAD Studio Electives*	6
	General Education – Ethical Perspective	3

COURSE		SEMESTER CREDIT HOURS
	General Education – Social Perspective	3
Third Year		
INDE-301	Office Design	3
INDE-302	Exhibition and Merchandising Design	3
INDE-303	Materials and Specifications	3
INDE-304	Building Systems	3
INDE-345	History of Architecture, Interiors, and Furniture I	3
INDE-346	History of Architecture, Interiors, and Furniture II	3
INDE-405	Business Practices and Career Planning	3
	Open Elective	3
	General Education – Immersion 1 (WI), 2	6
Fourth Year		
INDE-401	Multi-Story/Multi-Purpose Design†	3
INDE-403	Health Care Design	3
INDE-407	Contract Documents	3
INDE-411	Interior Design Capstone I	3
INDE-412	Interior Design Capstone II	3
	General Education – Immersion 3	3
	Open Electives	9
	General Education – Elective	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
* CAD Studio elective courses are any College of Art and Design course with a studio or lab component, per catalog restrictions.
† Course is 4 credits until Fall 2025-2026. Students admitted Fall 2022-2023 will likely take this course at 3 credits and as calculated above.

Combined Accelerated Bachelor's/Master's Degrees

The interior design BFA program is part of a 4+2 BFA/M.Arch. Pathway. Learn how this accelerated pathway enables you to earn a BFA and an M.Arch. degree in as little as six years.

Accreditation

The interior design program maintains accreditation from the Council for Interior Design Accreditation (CIDA), which includes student achievement data.

The interior design program leading to a bachelor of fine arts degree is accredited by the Council for Interior Design Accreditation, www.accredit-id.org, 206 Cesar E. Chavez Ave. SW, Suite 350, Grand Rapids, MI 49503.

The CIDA-accredited program prepares students for entry-level interior design practice, for advanced study, and to apply for membership in professional interior design organizations. The bachelor of fine arts degree granted by Rochester Institute of Technology meets the educational requirement for eligibility to sit for the National Council for Interior Design Qualification Examination (NCIDQ Exam). For more information about NCIDQ Exam eligibility visit: https://www.cidq.org/eligibility-requirements.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Transfer Admission

Transfer course recommendations without associate degree

Courses in studio art, art history, and liberal arts. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Related programs or studio art experience in desired disciplines. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information. Summer courses can lead to third-year status in most programs.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Medical Illustration, BFA

www.rit.edu/study/medical-illustration-bfa
Glen Hintz, Associate Professor
585-475-2126, grhfad@rit.edu

Program overview

What is a Medical Illustrator?

A medical illustrator is a professional artist with advanced education in the sciences (biology, human anatomy, physiology) and in art and design (illustration, 2D/3D/4D digital design, animation, interactive media). They are skilled in creating art that illustrates the things we often cannot see (internal organs of a body, cells and molecules, muscle tissues and tendons) or that need deeper explanation (how a surgery takes place, the inner workings of the human body, how a disease progresses).

Medical illustrators work with scientists, physicians, surgeons, researchers, and other medical specialists to take complex scientific information and distill it into visual images that can be used in a wide range of applications. These can include textbooks, brochures, infographics, interactive models, 2D and 3D animations, motion graphics, courtroom exhibits, digital presentations, educational materials, and more.

Medical Illustration Courses

During the first two years of the medical illustration degree, you will focus on developing your drawing and traditional illustration skills. During this time, you'll attend human biology, anatomy, and physiology classes. Building on this foundation of science courses, the third and fourth years of the major emphasize 2D and 3D computer illustration and animation. As a third and fourth-year student, you'll attend Human Gross Anatomy, a course that includes full head-to-toe dissection in RIT's Cadaver Lab, one of the few undergraduate cadaver labs in the nation. Through collaboration with area hospitals, you will also be able to draw from direct observation of surgical procedures and medical treatments in progress. The medical illustration degree explores all aspects of health care, from the molecular level through the macroscopic and into the theoretical.

Digital technology is integrated into the medical illustration program, which enables you to create highly polished, sophisticated images and well-designed, interactive, educational media presentations that include motion graphics, animation, and sound. You will graduate from the program with a comprehensive medical illustration portfolio that demonstrates your artistic talent, knowledge of scientific visualization, and expertise using multimedia.

Throughout your course work, you may select elective courses that enhance your studies or enable you to pursue an area of personal or professional interest. Electives are available in graphic design, new media design, 3D digital graphics, illustration, graphic visualization, industrial design, interior design, fine arts studio, environmental design, ceramics, glass, metals, textiles, woodworking, filmmaking, and photography. Additional electives are offered as special topics courses.

Refine Your Medical Illustration Portfolio

The medical illustration degree requires studio art experience and a portfolio of original artwork. In addition to offering portfolio requirements, RIT's School of Art offers an annual Pre-College Portfolio Preparation Workshop. This two-week visual arts class is designed to help prepare the portfolios of rising high school juniors and seniors for admission to college art programs. Learn more about the Pre-College Portfolio Preparation Workshop, including information on workshop dates and how to apply.

Graduate Study in Medical Illustration

RIT offers a medical illustration MFA. This is an advanced scientific illustration program and one of only five medical illustration programs at the graduate level in North America, and the only program in the northeast. The two-year program culminates with the production of a thesis project, which requires extensive background research and an original body of art and design work on a complex medical topic.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. An art and design co-op provides hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education, internships, and other experiential learning opportunities are encouraged for students in the BFA in medical illustration.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Medical Illustration, BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
FDTN-111	Drawing I	3
FDTN-112	Drawing II	3
FDTN-121	2D Design I	3
FDTN-122	2D Design II	3
FDTN-131	3D Design I	3
ILLS-209	3D Applications: The Figure	3
MEDG-101	Human Biology I (General Education – Natural Science Inquiry Perspective)	3
MEDG-102	Human Biology II (General Education)	3
MEDG-103	Human Biology Laboratory I (General Education – Natural Science Inquiry Perspective)	1
MEDG-104	Human Biology Laboratory II (General Education)	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Ethical Perspective	3
Second Year		
ARTH-###	Any 100-level ARTH course (General Education-Artistic Perspective)	3
ARTH-###	Any 100-level ARTH course (General Education-Global Perspective)	3
FDTN-141	4D Design	3
ILLM-507	Computer Applications in Medical Illustration	3
ILLS-214	Anatomical Illustration	3
MEDS-250	Human Anatomy and Physiology I	4
MEDS-251	Human Anatomy and Physiology II	4
	Illustration Professional Elective‡	3
	Open Elective	3
	General Education – Social Perspective	3
Third Year		
ILLM-501	Human Gross Anatomy	6
ILLM-502	Illustrating Human Anatomy	3
ILLM-503	3D Modeling of Organic Forms	3
ILLM-506	3D Animation of Organic Forms	3
ILLM-508	Scientific Visualization	3
	CAD Studio Elective§	3
	General Education – Immersion 1 (WI), 2	6
	Art History Elective†	3
Fourth Year		
ILLM-512	Surgical Illustration	3
ILLM-515	Contemporary Media I	3
ILLM-516	Contemporary Media II	3
ILLM-517	Portfolio and Business Practices (WI-PR)	3
	CAD Studio Electives§	3
	Art History Elective†	3
	General Education – Immersion 3	3
	Open Electives	9
Total Semester Credit Hours		**124**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.
‡ Illustration Professional Electives include the following: Illustration I (ILLS-213), Digital Illustration I (ILLS-219), and Zoological and Botanical Illustration (ILLS-563).
§ CAD Studio Electives are any College of Art and Design course with a studio or lab component, per catalog restrictions.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science and biology is required.
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Transfer Admission

Transfer course recommendations without associate degree

Courses in studio art, art history, and liberal arts. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Related programs or studio art experience in desired disciplines. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information. Summer courses can lead to third-year status in most programs.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Motion Picture Science, BS

www.rit.edu/study/motion-picture-science-bs
Ricardo Figueroa, Associate Professor
585-475-2745, rrfppr@rit.edu

Program overview

What's the last great movie or TV show you saw that made a lasting impression on you? The most ingenious minds behind the most captivating shows and movies apply their knowledge of science and engineering, and use their passion for storytelling to make film, television, and animation possible.

The BS in motion picture science provides a science- and engineering-based education in the fundamental imaging technologies used for the motion picture industry. By combining a core curriculum in filmmaking, production, and digital cinema from the College of Art and Design and course work from the imaging science major in the College of Science, the motion picture science degree prepares students in the art and science of feature film, television, and animation production. Topics include film and digital image capture, film scanning, digital image manipulation, color science, visual effects, and digital and traditional projection. New facilities provide students with hands-on experience on the same equipment being used in major motion picture production today.

Utilizing research, critical thinking, creativity, and a range of problem-solving principles, students are taught to address complex motion imaging workflow issues within the constraints of time, space, budget, and technology. Graduates enjoy a variety of career opportunities. Our alumni develop digital cinema technology, manage feature film and television post-production, design imaging equipment, and conduct research and development that continues the advancement of motion imaging technology.

Industry Connections

Students are active in making industry connections through attendance at large national conferences, including the National Association of Broadcaster's annual trade show and the Society of Motion Picture and Television Engineer's Annual Technical Conference & Exhibition. Additionally, students, faculty, and alumni are routinely recognized at SMPTE's annual conference for their innovations and contributions to cinema technology. Students and alumni have won numerous SMPTE awards for their undergraduate research at RIT and for their research as industry professionals.

Study Filmmaking in LA

Study Away: LA gives film and animation majors the opportunity to spend a semester in Los Angeles learning from industry professionals. The bulk of your time will be spent at internships, but you'll also complete two courses that will complement your study-away experience. Learn more about Study Away: LA and how you can gain industry experience in traditional filmmaking, animation, or cutting-edge areas like virtual production in Los Angeles, the epicenter of the global entertainment universe.

Professional Student Organizations

RIT's School of Film and Animation maintains memberships in a number of professional organizations: Animation World Network, College Art Association, Rochester Audio Visual Association, Society of Motion Picture and Television Engineers, University Film and Video Association, Siggraph, and BEA.

Combined Accelerated Bachelor's/Master's Degree

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. An art and design co-op provides hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education, internships, and other experiential learning opportunities are encouraged for students in the BS in motion picture science.

Curriculum

Motion Picture Science, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
IMGS-181	Freshman Imaging Project I	3
IMGS-182	Freshman Imaging Project II	3
IMGS-221	Vision & Psychophysics (General Education)	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Natural Science Inquiry Perspective)	4
SOFA-101	Production	3
SOFA-103	Introduction to Imaging and Video Systems (General Education)	3
SOFA-205	Basic Sound Recording	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Second Year		
IMGS-180	Object-Oriented Scientific Computing	3
IMGS-211	Probability and Statistics for Imaging	3
IMGS-261	Linear and Fourier Methods for Imaging	4
IMGS-351	Fundamentals of Color Science (General Education)	3
PHYS-212	University Physics II (General Education – Scientific Principles Perspective)	4
SOFA-121	Animation I (General Education)	3
SOFA-502	Production Processes	6
SOFA-517	IT Fundamentals for Digital Media	3
	General Education – Ethical Perspective	3
Third Year		
IMGS-251	Radiometry	3
IMGS-321	Geometric Optics (General Education)	3
IMGS-361	Image Processing and Computer Vision I	3
IMGS-362	Image Processing & Computer Vision II	3
SOFA-311	Image Capture and Production Technology	3
SOFA-312	Digital Post Production Technology (WI-PR)	3

COURSE		SEMESTER CREDIT HOURS
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Immersion 1	3
	Track Elective	3
Fourth Year		
SOFA-313	Film Projection and Digital Cinema	3
SOFA-401	Senior Project I	3
SOFA-402	Senior Project II	3
	General Education – Social Perspective	3
	General Education – Immersion 2 (WI-GE), 3	6
	Open Electives	12
Total Semester Credit Hours		**125**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Track Electives

Choose one of the following:	
IMGS-341	Interactions Between Light and Matter
SOFA-105	Documentary Field Practices
SOFA-209	Introduction to 3D Modeling
SOFA-221	After Effects for Animators
SOFA-516	Virtual Production I
SOFA-531	Digital Effects & Compositing
SOFA-567	Digital Color Correction
SOFA-568	Digital Color Management
SOFA-586	Programming for 3D Animators

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics which must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus and physics are also preferred.
- 2-3 years of science

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, science, design, drawing, and film, video, or animation.

Appropriate associate degree programs for transfer

Transfer as a third-year student is uncommon, as comparable programs are not generally available at other colleges.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

New Media Design, BFA

www.rit.edu/study/new-media-design-bfa
Jason Arena, Associate Professor
585-475-4542, jxafaa@rit.edu

Program overview

Every day, millions of people engage in interactive digital experiences, from smartphones and smart TVs, to tablets, wearables, gaming systems, and more. In the new media design degree, you'll explore dynamic aspects of digital design–visual design, user experience design, interaction, motion graphics, and technology–that give you the skills you need to create captivating, interactive media.

What is New Media?

New media is an ever-changing form of digital communication that engages, immerses, and entertains its users.

The term new media was first coined in the mid-80s to refer to the impact computing was beginning to have on traditional forms of media, such as newspapers, radio, and television. But as digital platforms began to evolve beyond the internet, new media came to encompass all types of information and entertainment accessed by our computers, phones, and tablets. New media now encompasses anything that integrates communication, computing, and technology – from social media (Facebook, Instagram) and streaming services (Spotify, Hulu, Amazon Prime), to highly interactive digital technologies like wearables (Apple Watch, FitBit), virtual reality, augmented reality, and gaming.

RIT's New Media Design Degree

In the new media design degree, your course work will help you build the skills you need to design for interactive media. These courses include visual design foundations, 2D and 4D design, animation, information design, user interface design, user experience design, 3D modeling, motion graphics, web and multimedia technologies, usability research, and programming. You'll gain the skills needed to design cutting-edge interactive solutions from mobile apps to fully immersive digital environments.

Design for interactive media requires collaboration with programmers skilled in interactive design. As a new media design student, you'll benefit from close collaboration with students in RIT's new media interactive development major, which focuses heavily on programming and interactive development. Courses in this major address the computing and programming side of new media design, with classes covering topics in mobile development and alternative interfaces, website design and implementation, physical/wearable computing, game design, game development, design and media production, interactive audio, and more. Both programs share core courses in programming and design, enabling students in both majors to develop the complementary skill sets needed for success in the industry.

Your senior year concludes with New Media Design Capstone I and II, a two-course, two-semester capstone project in which you'll team up with students from the new media interactive development major to work on a project for a corporate client looking for a solution to a digital challenge their organization faces. You'll gain the teamwork experience needed as you learn to develop, navigate, and leverage the designer-programmer-client relationship. With many courses both project- and team-based, you'll build a robust portfolio of interactive projects, positioning you well to showcase your skills, capabilities, and knowledge to prospective employers upon graduation. View samples of new media team projects to see what our teams have created.

Careers in Digital Media

Digital media is everywhere and we interact with it daily, on phones and tablets, on wearables, and in gaming. As a result, careers in digital media, new media design, and design for interactive media are booming. With a new media design degree, you will graduate with the skills and the experience to launch a career in visualization design, interactive design, and user experience design for digital advertising, marketing, social media, mobile app development, web applications, entertainment and gaming, and corporate design.

You'll also be well-positioned to utilize your skills in video and audio production, game design, 4D design, television streaming and broadcasting, interactive website design, graphic design, illustration, and more.

Connect with New Media Professionals

The School of Design maintains memberships in a variety of professional organizations that foster a community of design, new media, interactive design, and digital design professionals, including Industrial Designers Society of America, ACM Siggraph, Society of Environmental Graphic Designers, American Society of Interior Designers, American Institute of Architects, ICOGRADA, American Institute of Graphic Arts, and International Interior Design Association.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. An art and design co-op provides hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education, internships, and other experiential learning opportunities are encouraged for students in the BFA in new media design.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

New Media Design, BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NMDE-103	New Media Design Interactive I	3
FDTN-111	Drawing I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
FDTN-121	2D Design I	3
FDTN-141	4D Design	3
NMDE-111	New Media Design Digital Survey I	3
NMDE-112	New Media Design Digital Survey II	3
YOPS-10	RIT 365: RIT Connections	0
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
Second Year		
ARTH-###	Any 100-level ARTH course (General Education-Artistic Perspective)	3
ARTH-###	Any 100-level ARTH course (General Education-Global Perspective)	3
IGME-101	New Media Interactive Design and Algorithmic Problem Solving I	4
IGME-102	New Media Interactive Design and Algorithmic Problem Solving II	4
NMDE-201	New Media Design Elements II	3
NMDE-202	New Media Design 3D	3
NMDE-203	New Media Design Interactive II	3
NMDE-204	New Media Design Animation	3
	CAD Studio Elective‡	3
	General Education – Social Perspective	3
Third Year		
NMDE-305	New Media Design Motion Graphics	3
NMDE-302	New Media Design Graphical User Interface	3
NMDE-301	New Media Design Elements III (WI-PR)	3
NMDE-303	New Media Design Interactive III	3
	Art History Electives†	6
	Open Electives	6
	General Education – Immersion 1 (WI)	3
	Professional Elective§	3
Fourth Year		
NMDE-401	New Media Design Capstone I	3
NMDE-404	New Media Design Interactive IV	3
NMDE-411	New Media Design Capstone II	3
NMDE-406	New Media Design Experimental	3
	General Education – Immersion 2, 3	6
	General Education – Elective	3
	Open Electives	9
Total Semester Credit Hours		**122**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH; and are 200 level or above.
‡ CAD Studio Elective courses are any College of Art and Design course with a studio or lab component, per catalog restrictions.
§ Professional Elective courses are any course offered by the following disciplines: GRDE, IGME, ISTE, IDDE, DDDD, SOFA, or photography (PHAP, PHAR, PHFA, PHPJ, PHVM, PHPS).

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Transfer Admission

Transfer course recommendations without associate degree

Courses in studio art, art history, and liberal arts. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Related programs or studio art experience in desired disciplines. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information. Summer courses can lead to third-year status in most programs.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Photographic and Imaging Arts, BFA

www.rit.edu/study/photographic-and-imaging-arts-bfa
Christye Sisson, Professor
585-475-7197, cpspph@rit.edu

Program overview

The photographic and imaging arts major—with options in advertising photography, fine art photography, photojournalism, and visual media—has a rigorous curriculum designed with individual achievement in mind. It features an immersive and hands-on perspective geared towards creativity and innovation. Enrollment in photography classes begins on day one of the first year. Theoretical and experimental components lead to the development of broad-based skills required of professionals in today's ever-changing image culture, art world, and industries. With access to more than 150 unique photography, video, multimedia, web-based, and publication courses, students are challenged using real-world problems to produce successful real-world results.

Photographic and imaging arts majors participate in an educational community that includes required course work in general studies and operates in an environment with both undergraduate and graduate students. It is a community where students have the opportunity to work and study with our highly respected and accomplished faculty in state-of-the-art facilities. The School of Photographic Arts and Sciences also offers a wide array of visiting professionals, events, and talks, including the Charles Arnold Lecture Series and the RIT Big Shot, along with non-credit bearing summer workshops. Students undecided on which photography major best meets their career aspirations and interests may apply to the undeclared photography option.

Options

Advertising Photography Option
Be prepared for a diverse and rewarding career in the field of visual communications. Learn to create photographs and moving media for a wide range of commercial use in today's fast-changing media environment. For more information on the advertising photography option, including samples of student work and alumni profiles, visit Advertising Photography Option–Photographic and Imaging Arts BFA.

Fine Art Photography
The fine art photography option prepares students for careers as visual artists, educators, editorial photographers, or freelance artists. Study the theoretical and practical skills needed to create thought-provoking and meaningful images develops technical, conceptual, and aesthetic abilities, and become a contemporary image-maker. For more information on the fine art photography option, including samples of student work and alumni profiles, visit Fine Art Photography Option–Photographic and Imaging Arts BFA.

Photojournalism
Produce non-fiction visual reporting that tells the stories of people, social issues and events for diverse and modern media outlets including digital and print. Learn to create and publish both still photographic reporting as well as moving and interactive media that document our diverse culture, evoking both the momentous and the everyday circumstances of contemporary life and society. For more information on the photojournalism option, including samples of student work and alumni profiles, visit Photojournalism Option–Photographic and Imaging Arts BFA.

Visual Media

Integrate the graphic communications professions of photography, media design, and business. Prepare for a career as a visual media specialist or other professional positions that have a demand for photographically skilled professionals who can work effectively with graphic designers, print media specialists, multimedia and social media professionals. For more information on the visual media option, including samples of student work and alumni profiles, visit Visual Media Option–Photographic and Imaging Arts BFA.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Co-op in the College of Art and Design provides hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education, internships, and other experiential learning opportunities are encouraged for students in the BFA in photographic and imaging arts.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Photographic and Imaging Arts (advertising photography option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: Survey: Ancient to Medieval	3
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
PHAR-101	Photographic Arts I	4
PHAR-102	Photographic Arts II	4
PHPS-106	Photographic Technology I	3
PHPS-107	Photographic Technology II	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Second Year		
FDTN-141	4D Design	3
PHAR-202	Elements of Advertising Photography	3
PHAR-211	Histories and Aesthetics of Photography I	3
PHAR-212	Histories and Aesthetics of Photography II	3
Choose one of the following:		3
PHAR-201	Elements of Fine Art Photography	
PHAR-203	Elements of Photojournalism	
PHAR-204	Elements of Visual Media	
	General Education – Social Perspective	3
	General Education – Ethical Perspective	3
	CAD Elective	3
	Open Electives	3
	General Education – Elective	3
Third Year		
PHAP-241	Advanced Video for Photographers	3
PHAP-301	Advertising Photography I	3
PHAP-302	Advertising Photography II	3
PHAP-361	Retouch and Restore	3
	Advertising Photography Professional Electives‡	6
	CAD Elective§	3
	General Education – Immersion 1 (WI-GE), 2	6
	Open Elective	3
Fourth Year		
PHAP-403	Portfolio Development (WI-PR)	3
Choose one of the following:		3
FINC-120	Personal Financial Management	
MGMT-150	Business 1T: An Introduction to Business	
MGMT-215	Organizational Behavior	
MKTG-230	Principles of Marketing	
MKTG-370	Advertising and Promotion Management	
MKTG-489	Seminar in Marketing	
PHAP-321	Industry Practices for Professional Photographers	
	CAD Electives§	9
	Open Elective	6
	General Education – Immersion 3	3
	Advertising Photography Professional Elective‡	6
Total Semester Credit Hours		**122**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Please consult an adviser for a complete list of courses that fulfill the advertising specialization requirement.
‡ Please consult an adviser for a complete list of courses that fulfill the professional elective requirement.
§ CAD elective refers to any course in the College Art and Design.
** Please consult an advisor for a complete list of imaging core courses.

Photographic and Imaging Arts (fine art photography option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: Survey: Ancient to Medieval	3
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
PHAR-101	Photographic Arts I	4
PHAR-102	Photographic Arts II	4
PHPS-106	Photographic Technology I	3
PHPS-107	Photographic Technology II	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Second Year		
FDTN-141	4D Design	3
PHAR-201	Elements of Fine Art Photography	3
PHAR-211	Histories and Aesthetics of Photography I	3
PHAR-212	Histories and Aesthetics of Photography II	3
Choose one of the following:		3
PHAR-202	Elements of Advertising Photography	
PHAR-203	Elements of Photojournalism	
PHAR-204	Elements of Visual Media	
	CAD Elective	3
	General Education - Ethical Perspective	3
	General Education – Social Perspective	3
	Open Electives	3
	General Education - Elective	3
Third Year		
PHFA-301	Fine Art Core I	3
PHFA-302	Fine Art Core II	3
PHFA-401	Professional Development for Artists (WI-PR)	3
	Art History Elective	3
	Fine Art Photography Professional Elective‡	6
	CAD Elective§	3
	General Education – Immersion 1 (WI-GE), 2	6
	Open Elective	3
Fourth Year		
PHFA-402	Fine Art Photography Portfolio I	3
PHFA-403	Fine Art Photography Portfolio II	3
	Fine Art Photography Professional Elective‡	6
	CAD Electives§	9
	Open Elective	6
	General Education – Immersion 3	3
Total Semester Credit Hours		**122**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Please consult an adviser for a complete list of courses that fulfill the fine art photo specialization requirement.
‡ Professional Electives are Art History courses which are coded in SIS with the Art History attribute, ARTH.
§ CAD elective refers to any course in the College Art and Design.
** Please consult an advisor for a complete list of imaging core courses.

Photographic and Imaging Arts (photojournalism option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: Survey: Ancient to Medieval	3
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
PHAR-101	Photographic Arts I	4
PHAR-102	Photographic Arts II	4
PHPS-106	Photographic Technology I	3
PHPS-107	Photographic Technology II	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Second Year		
FDTN-141	4D Design	3
PHAR-203	Elements of Photojournalism	3
PHAR-211	Histories and Aesthetics of Photography I	3
PHAR-212	Histories and Aesthetics of Photography II	3
Choose one of the following:		3
PHAR-201	Elements of Fine Art Photography	
PHAR-202	Elements of Advertising Photography	
PHAR-204	Elements of Visual Media	
	General Education – Social Perspective	3
	General Education – Ethical Perspective	3
	CAD Elective	3
	Open Electives	3
	General Education – Elective	3
Third Year		
IDEA-301	Foundations of Project Development (WI-PR)	3
PHPJ-302	Photojournalism I	3
PHPJ-306	Picture Editing	
PHPJ-307	Ethics and Law	3
PHPJ-315	Non-Fiction Multimedia	3
PHPJ-455	Advanced Non-Fiction Multimedia	3
	CAD Elective§	3
	General Education – Immersion 1, 2	6
	Open Elective	3
Fourth Year		
PHPJ-401	Photojournalism Capstone 1 (WI-PR)	3
PHPJ-402	Photojournalism Portfolio and Professional Development	3
	CAD Electives§	9
	Open Elective	6
	General Education – Immersion 3	3
	Photojournalism Professional Electives‡	6
Total Semester Credit Hours		**122**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Please consult an adviser for a complete list of courses that fulfill the photojournalism specialization requirement.
‡ Please consult an adviser for a complete list of courses that fulfill the professional elective requirement.
§ CAD elective refers to any course in the College of Art and Design.
** Please consult an advisor for a complete list of imaging core courses.

Photographic and Imaging Arts (visual media option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: Survey: Ancient to Medieval	3
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
PHAR-101	Photographic Arts I	4
PHAR-102	Photographic Arts II	4
PHPS-106	Photographic Technology I	3
PHPS-107	Photographic Technology II	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Second Year		
FDTN-141	4D Design	3
PHAR-204	Elements of Visual Media	3
PHAR-211	Histories and Aesthetics of Photography I	3
PHAR-212	Histories and Aesthetics of Photography II	3
Choose one of the following:		3
PHAR-201	Elements of Fine Art Photography	
PHAR-202	Elements of Advertising Photography	
PHAR-203	Elements of Photojournalism	
	CAD Electives	3
	General Education – Social Perspective	3
	General Education – Ethical Perspective	3
	Open Electives	6
	General Education – Elective	3
Third Year		
GRDE-106	Graphic Design Studio	3
GRDE-201	Typography I	3
	SCB Business Course	6
	Visual Media Professional Electives‡	6
	CAD Elective§	3
	General Education – Immersion 1 (WI-GE), 2	6
	Open Elective	3
Fourth Year		
Choose one of the following:		3
GRDE-202	Graphic Design Studio II	
GRDE-206	Typography II	
GRDE-207	Interactive Design I	
GRDE-217	Motion Design II	
PHVM-301	Visual Media Career Research	3
PHVM-401	Visual Media Capstone (WI-PR)	3
	CAD Electives§	9
	Open Elective	6
	SCB Business Course	3
	General Education – Immersion 3	3
Total Semester Credit Hours		**122**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Please consult an advisor for a complete list of courses that fulfill the visual media specialization requirement.
‡ Please consult an advisor for a complete list of courses that fulfill the professional elective requirement.
§ CAD elective refers to any course in the College of Art and Design.
** Please consult an advisor for a complete list of imaging core courses.

Accreditation

All four options of the BFA program in photographic and imaging arts, as well as the MFA program in photography and related media, are accredited by the National Association of Schools of Art and Design (NASAD).

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, photography, design, and art history. Portfolio required for photo credit. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Applied Photography. Portfolio required for photo credit. View Portfolio Requirements for more information.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Photographic Arts and Sciences Exploration

www.rit.edu/study/photographic-arts-and-sciences-exploration
Christye Sisson, Professor
585-475-7197, cpspph@rit.edu

Program overview

For students interested in photography but unsure which major best meets their career aspirations, the photographic arts and sciences exploration option provides you with an overview of the two photography majors and their options. Students will learn about the curriculum, course work, and career paths associated with the BFA in photographic and imaging arts (with options in advertising photography, fine art photography, photojournalism, or visual media) and the BS in photographic sciences. This exploration option allows you to take up to a year to learn about each major while you complete general education and liberal arts courses.

Curriculum

Photography undeclared, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		8
PHPS-101, 102	Photography I, II (BS)	
PHAR-101, 102	Photo Arts I, II (BFA)	
PHPS-106	Photographic Technology I	3
PHPS-107	Photographic Technology II	3
ENGL-150	FYW: Future of Writing	3
YOPS-10	RIT 365: RIT Connections	0
	General Education-Ethical Perspective	3
	General Education-Natural Science Inquiry Perspective	3
	General Education-Scientific Principles Perspective	3
	General Education-Mathematical B Perspective	3
Choose one of the following:		3
ARTH-135	General Education-Artistic Perspective: History of Western Art: Ancient to Medieval	
	General Education-Natural Science Inquiry Perspective	
	General Education-Mathematical A Perspective	
Choose one of the following:		3
ARTH-136	General Education-Global Perspective: History of Western Art: Renaissance to Modern	
	General Education-Mathematical B Perspective	
	General Education-Scientific Principles Perspective	
Choose one of the following:		3
FDTN-111	Drawing I (BFA)	
FDTN-121	2D Design I	
	General Education-Artistic Perspective (BS)	
Total Semester Credit Hours		**32**

Please see General Education Framework in the Graduation Requirements section of this bulletin for more information.

Photographic Sciences, BS

www.rit.edu/study/photographic-sciences-bs
Daniel Hughes, Lecturer
dahpph@rit.edu

Program overview

Part scientist, part artist. A scientific photographer uses imaging to capture scientific data to explore science and medicine. These scientific images identify and solve problems–and help to advance our understanding–in biology and biomedical sciences, medicine, forensics, chemistry, and engineering. It's a dynamic field that combines photography with imaging science, information technology, computing, optics, biology, and biomedical sciences.

How to Become a Scientific Photographer

A scientific photographer needs to have the broad-based skills required of a professional photographer combined with a solid foundation in the sciences. RIT's photographic sciences program provides this in-depth study, preparing you to launch a successful career as a scientific photographer.

You'll complete courses that develop your abilities as a photographer and gain the photographic skills and approaches required of scientific photography. In addition, you'll study science and technology through the lens of photography, with courses in high-speed photography, micrography, and ophthalmic imaging.

In the first two years, this scientific photography degree will immerse you in the technical applications of scientific photography while you also pursue courses in laboratory sciences, including physics and biology. This in a photography degree that is flexible, and enables you to use elective courses to explore areas that interest you and complement your career goals. You'll be encouraged to use general education requirements to integrate complementary studies in subjects such as imaging science, information technology, or developmental biology to help prepare for exciting and evolving career opportunities. It is common for graduates to pursue advanced degrees in fields such as optics, imaging science, and medicine.

You will graduate well-prepared to apply technological advances in photography to a wide variety of photographic and imaging careers spanning the fields of science, technology, and medicine.

Scientific Photography Careers

With a 95% outcomes rate, you'll be well-prepared to launch an exciting career in scientific photography. Our graduates are employed as ophthalmic photographers, forensic photographers, surgical photographers, photomicrographers, medical photographers, latent finger print examiners, core imaging facility managers, technical support engineers, imaging specialists, imaging engineers, public relations photographers, research associates, dermatology photographers, research photographers, and image quality engineers.

Recent employers include imaging companies, universities and research centers, camera companies, forensic laboratories, and government agencies. NASA, Apple, The Mayo Clinic, Carl Zeiss Microscopy, Harvard University, the National Geospatial Intelligence Agency, and Canon have all hired graduates of the program.

Photographic Sciences Student Association

The Photographic Sciences Student Association promotes professional and social interaction among students in the program and professionals from the imaging and photographic technology industries. The association regularly invites alumni and leaders from the professional imaging fields to present lectures and demonstrations.

Accelerated 4+1 MBA

An accelerated 4+1 MBA option is available to students enrolled in any of RIT's undergraduate programs. RIT's accelerated bachelor's/master's degrees can help you prepare for your future faster by enabling you to earn both a bachelor's and an MBA in as little as five years of study.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Co-op in the College of Art and Design provides hands-on experience that enables you to apply your artistic capabilities in dynamic professional settings while you make valuable connections between classwork and real-world applications.

Students in the photographic sciences program are required to complete one co-op experience. These experiences are generally completed between the second and third academic years. Some recent co-op placements, as well as permanent job placements, include Harvard University, the Mayo Clinic, Smithsonian, Georgetown University, Case Western Reserve University, NASA, Imatest, Carl Zeiss Microscopy, FBI, Nikon Scientific Instruments, Apple Inc., and NVIDIA.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. The 2021 Creative Industry Day will be a week-long virtual event where you'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Photographic Sciences, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
PHAR-101	Photographic Arts I	4
PHPS-102	Photography II	4
PHPS-106	Photographic Technology I	3
PHPS-107	Photographic Technology II	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Mathematical Perspective A**	3
	General Education – Mathematical Perspective B**	3
	General Education – First-Year Writing (WI)	3
Second Year		
FDTN-141	4D Design	3
PHPS-201	Scientific Photography I	3
PHPS-202	Scientific Photography II	3
PHPS-207	General Education – Elective: Vision, Perception and Imaging (WI-GE)	3
PHPS-211	Photographic Optics	3
PHPS-217	Media Production & Technology	3
PHPS-499	Photographic Sciences Co-op (summer)	0
	General Education – Elective	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective	4
	General Education – Scientific Principles Perspective	4
Third Year		
PHPS-331	Programming for Photographic Sciences	3
PHPS-332	Digital Image Processing	3
	Professional Electives	6
	General Education – Elective (Choose from STEM Elective list)	4
	General Education - Elective	3
	General Education – Immersion 1, 2	6
	Open Electives	6
Fourth Year		
PHPS-401	Photographic Sciences Capstone I (WI-PR)	3
PHPS-403	Photographic Sciences Capstone II	3
	General Education – Immersion 3	3
	General Education – Electives	6
	Open Electives	9
	Professional Electives§	6
Total Semester Credit Hours		**125**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
§ Please see an advisor for a complete list of photographic sciences electives.
** Please see an advisor for math and science course recommendations.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics which must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Biology is preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, photography, design, and art history. Portfolio required for photo credit. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Applied Photography. Portfolio required for photo credit. View Portfolio Requirements for more information.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Studio Arts, BFA

www.rit.edu/study/studio-arts-bfa

Jane Shellenbarger, Associate Professor
jmssac@rit.edu

Program overview

The studio arts major offers options in ceramics, expanded forms, furniture design, glass, metals and jewelry design, painting, printmaking, and sculpture. The close alignment of curricular content and scheduling among these eight options fosters a sense of community through shared experiences and facilitated interaction. Through this integration, students acquire the conceptual and technical skills required to succeed as creative professionals.

The curriculum engages students in comprehensive inquiry that expands and supports their subject matter, ideation through sketches and models, articulation of a rationale for the application of media and process, and finally the refinement of work through editing and critique. Students are also exposed to a wide scope of visual arts and study their cultural relevance through visiting artists, trips to museums, and attendance at professional conferences. During the senior year, students exhibit their final body of work in a gallery. Guidance and experiential projects focusing on the presentation of work, self-promotion, business practice, and issues of professional engagement within the field help students thrive as creative professionals after graduation.

Upon completion of the program, students may choose to continue their education at the graduate level or begin careers by setting up independent studios and exhibiting their work. They also find employment in the fields of art therapy, art criticism, art restoration, gallery and museum management, set and display design, and marketing and advertising; in auction houses for their knowledge of contemporary and historical art and material culture; or as educators. Faculty members are active artists who exhibit widely and are committed to diverse approaches to art-making. They serve as inspiring role models for studio arts majors and offer them support and networking opportunities as they emerge as professionals.

Options

Students choose an option in one of the following areas:

Ceramics–The ceramics option provides a dynamic environment where intellectual discourse and craftsmanship thrive. Students focus on intellectual development, technical skill, and practical knowledge. The curriculum supports a range of fundamental topics within ceramics, such as sculpture, pottery, mold-making, glazing, firing, and material science, and personal aesthetic development with individual critiques and group discussions. Students selecting this option are equipped with the professional and practical skills necessary to operate a studio business.

Expanded forms–Artists have always challenged the definition of art. These challenges have pushed art into new realms of expression and the public into new ways of seeing. The expanded forms option, like the wider art world, extends beyond the traditional forms of painting, printmaking, and sculpture. Artists have expanded the possibilities for expression. Object making goes hand-in-hand with performance, installation, computer art, and multi-media displays. Students are encouraged to explore the full spectrum of experimental and non-traditional artistic expression.

Furniture design–The furniture design option engages students in the pursuit of their creative interests while providing a comprehensive technical background in contemporary woodworking. The option focuses on technical expertise, freeing students to investigate a full range of creative

expression and professional interests. A carefully sequenced curriculum begins with a firm foundation in the use and maintenance of hand tools, proceeding on to more advanced tools and topics in construction and design.

Glass–Through a rigorous and diversified curriculum, the glass option cultivates artists who are as versatile in their making as they are in their thinking. Studio instruction in glassblowing, flame-working, hot and kiln casting, cold-working, kiln-forming, glass imaging processes, and three-dimensional digital technologies help inform each student's creative potential with glass. An emphasis on research, idea development, material exploration, execution, and presentation equips students with the skills needed to succeed as professionals. Students in the glass option are also eligible to apply to a Glass Studio Residency Program.

Metals and jewelry design–The metals and jewelry design option focuses on design, aesthetics, as well as material and process mastery. Self-discovery is at the heart of student assignments, projects, and group discussions. This option develops students' creative potential through a broad introduction to materials and production techniques before moving on to advanced techniques in various metals.

Painting–Students selecting the painting option engage in contemporary visual art practice through a personal exploration of painting techniques. The comprehensive curriculum covers traditional methodologies as well as contemporary visual art practices. Rigorous studio practice and critical discourse encourage the development of a strong personal language that allow for effective individual expression.

Printmaking–The printmaking option focuses on concepts and techniques. Organized to offer a flexible experience, this option targets the development of problem-solving and skill-building within the context of printmaking. The curriculum addresses a wide variety of media, tools, and both traditional and technological techniques, as well as theoretical concepts to facilitate skill development and experimentation processes.

Sculpture–The sculpture option engages students in the exploration of three-dimensional art-making. Traditional sculptural processes are introduced, such as bronze casting, stone carving, steel fabrication, and mold-making, within a curriculum that focuses on both formal and conceptual development. Working with a broad variety of materials, ideas, and practices, students are prepared to engage in the dialogue of contemporary sculpture. Over the course of the major, students develop the technical, visual, and intellectual skills required to develop a sophisticated body of work.

Pre-College Portfolio Preparation Workshop

The School of Art's annual Pre-College Portfolio Preparation Workshop is a two-week visual arts class designed to prepare the portfolios of rising high school juniors and seniors for admission to college art programs.

Combined Accelerated Bachelor's/Master's Degree

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Cooperative education, internships, and other experiential learning opportunities are optional but strongly encouraged for students in the BFA in studio arts.

Curriculum

Studio Arts (ceramics option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: History of Western Art: Ancient to Medieval	3
Choose one of the following:		3
ARTH-124	General Education – Global Perspective: Themes in the History of Art	
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	
ARTH-137	General Education – Global Perspective: Survey: Arts of the Ancient Americans	
CCER-124	Clay Studio Survey	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
Second Year		
CCER-206	Ceramic Sculptural Processes	3
CCER-211	Thrown Vessel Forms	3
FDTN-141	4D Design	3
STAR-503	CAD Drawing	3
	General Education – Immersion 1 (WI-GE)	3
	Art History Elective‡	3
	CAD Studio Elective	6
	General Education – Ethical Perspective	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Third Year		
CCER-507	Mold Mechanisms	3
CCER-511	Ceramics Processes	6
CCER-513	Thrown Sculptural Forms	3
STAR-311	Ideation and Series	3
	Art History Elective‡	3
	General Education – Immersion 2	3
	CAD Studio Elective†	3
	General Education – Elective	3
	Open Elective	3
Fourth Year		
CCER-501	Ceramic Practice	3
CCER-511	Ceramic Processes	6
STAR-411	Business Practices for Artists (WI-PR)	3
STAR-401	STAR Capstone	3
	CAD Studio Elective†	3
	General Education – Immersion 3	3
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.

(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† CAD Studio Electives are any College of Art and Design course with a lab or studio component.
‡ Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

Studio Arts (expanded forms option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: History of Western Art: Ancient to Medieval	3
Choose one of the following:		3
ARTH-124	General Education – Global Perspective: Survey: Themes in the History of Art	
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	
ARTH-137	General Education – Global Perspective: Survey: Arts of the Ancient Americans	
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
Choose one of the following:		3
FDTN-122	2D Design II	
FDTN-222	2D Design II Workshop: Topic	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
Second Year		
FDTN-141	4D Design	3
PAIT-201	Introduction to Painting	3
PRNT-201	Introduction to Printmaking	3
SCUL-201	Introduction to Sculpture	3
SCUL-511	Expanded Forms	3
STAR-505	Figure Drawing	3
	CAD Studio Elective†	3
	Art History Elective‡	3
	General Education – Ethical Perspective	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Third Year		
SCUL-511	Expanded Forms	6
STAR-311	Ideation and Series	3
Choose one of the following:		3
CGLS-530	Glass Processes	
NMDE-375	New Media Design Digital Painting	
PHFA-386	Multimedia Arts Workshop: Topic	
PHFA-556	Moving Image and Contemporary Practices	
SCUL-501	Sculpture	
SCUL-583	Welding and Fabrication	
STAR-301	Digital Fabrication Applications for the Studio	
	Art History Elective‡	3
	General Education – Immersion 1 (WI-GE)	3
	CAD Studio Electives†	6
	General Education – Elective	3
	Open Elective	3
Fourth Year		
SCUL-511	Expanded Forms	6
STAR-411	Business Practices for Artists (WI-PR)	3
STAR-401	STAR Capstone	3
Choose one of the following:		3
CGLS-530	Glass Processes	
NMDE-375	New Media Design Digital Painting	
PHFA-386	Multimedia Arts Workshop: Topic	
PHFA-556	Moving Image and Contemporary Practices	
SCUL-501	Sculpture	
SCUL-583	Welding and Fabrication	
STAR-301	Digital Fabrication Applications for the Studio	
	General Education – Immersion 2, 3	6
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
Students take SCUL-511 (Expanded Forms) for 15 credits and choose an additional 6 credits from: SCUL-501 (Sculpture), SCUL-583 (Welding and Fabrication), CGLS-530 (Glass Processes), PHFA-556 (Moving Image and Contemporary Practices), PHFA-386 (Multimedia Arts Workshop: Topic), STAR-301 (Digital Fabrication Applications), and NMDE-375 (New Media Design Digital Painting).
† CAD Studio Electives are any College of Art and Design course with a lab or studio component, per catalog restrictions.
‡ Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

Studio Arts (furniture design option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: Survey: Ancient to Medieval	3
Choose one of the following:		3
ARTH-124	General Education - Global Perspective: Survey: Themes in the History of Art	
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	
ARTH-137	General Education - Global Perspective: Survey: Arts of the Ancient Americas	
CWFD-124	Woodworking/Furniture Design Studio Survey	3
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
Second Year		
CWFD-213	Introduction to Woodworking and Furniture Design	3
CWFD-506	Furniture Design: Table Design and Construction	3
FDTN-141	4D Design	3
STAR-503	CAD Drawing	3
	General Education – Immersion 1 (WI-GE)	3
	Art History Elective‡	3
	CAD Studio Electives†	6
	General Education – Ethical Perspective	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Third Year		
CWFD-507	Furniture Design: Bench Design and Construction	3
CWFD-511	Furniture Design: Wood Carving	3
CWFD-512	Furniture Design: Box and Cabinet Design and Construction	3
STAR-311	Ideation and Series	3
	Art History Elective‡	3
	General Education – Immersion 2	3
	CAD Studio Elective†	6
	General Education – Elective	3
	Open Elective	3
Fourth Year		
CWFD-501	Furniture Design Senior I	6
CWFD-502	Furniture Design Senior II	3
STAR-411	Business Practices for Artists (WI-PR)	3
STAR-401	STAR Capstone	3
	CAD Studio Elective†	3
	General Education – Immersion 3	3
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† CAD Studio Electives are any College of Art and Design course with a lab or studio component.
‡ Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

Studio Arts (glass option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: History of Western Art: Ancient to Medieval	3
Choose one of the following:		3
ARTH-124	General Education – Global Perspective: Survey: Themes in the History of Art	
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	
ARTH-137	General Education – Global Perspective: Survey: Arts of the Ancient Americas	
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	CAD Studio Elective†	3
	General Education – Social Perspective	3
Second Year		
CGLS-206	Molten Glass Practice	3
CGLS-211	Mold and Kiln Glass Practice	3
CGLS-307	Hot Phenomena Glass Practice	3
CGLS-312	Kinetic Glass Practice	3
FDTN-141	4D Design	3
STAR-503	CAD Drawing	3
	Art History Elective‡	3
	General Education – Ethical Perspective	3
	General Education – Immersion 1 (WI-GE)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Third Year		
CGLS-301	Glass Junior I	6
CGLS-302	Glass Junior II	6
STAR-311	Ideation and Series	3
	Art History Elective‡	3
	General Education – Immersion 2	3
	CAD Studio Elective†	3
	General Education – Elective	3
	Open Elective	3
Fourth Year		
CGLS-501	Glass Senior I	6
CGLS-502	Glass Senior II	3
STAR-411	Business Practices for Artists (WI-PR)	3
STAR-401	STAR Capstone	3
	CAD Studio Elective†	3
	General Education – Immersion 3	3
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† CAD Studio Electives are any College of Art and Design course with a lab or studio component, per catalog restrictions.
‡ Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

Studio Arts (metals and jewelry design option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: History of Western Art: Ancient to Medieval	3
Choose one of the following:		3
ARTH-124	General Education – Global Perspective: Survey: Themes in the History of Art	
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	
ARTH-137	General Education – Global Perspective: Survey: Arts of the Ancient Americas	
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
	CAD Studio Elective†	3
Second Year		
CMTJ-206	Methods and Practice	3
CMTJ-207	Design, Fabrication, and Forming	3
CMTJ-211	Design and Fabrication	3
CMTJ-212	Fabrication, Casting, and Mold Making	3
FDTN-141	4D Design	3
STAR-503	CAD Drawing	3
	Art History Elective‡	3
	General Education – Ethical Perspective	3
	General Education – Immersion 1 (WI-GE)	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Third Year		
CMTJ-301	Metals and Jewelry Design Junior I	6
CMTJ-302	Metals and Jewelry Design Junior II	6
STAR-311	Ideation and Series	3
	Art History Elective‡	3
	General Education – Immersion 2	3
	CAD Studio Elective†	3
	General Education – Elective	3
	Open Elective	3
Fourth Year		
CMTJ-501	Metals and Jewelry Design Senior I	6
CMTJ-502	Metals and Jewelry Design Senior II	3
STAR-411	Business Practices for Artists (WI-PR)	3
STAR-401	STAR Capstone	3
	CAD Studio Elective†	3
	General Education – Immersion 3	3
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† CAD Studio Electives are any College of Art and Design course with a lab or studio component, per catalog restrictions.
‡ Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

Studio Arts (painting option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: Survey: Ancient to Medieval	3
Choose one of the following:		3
ARTH-124	General Education – Global Perspective: Survey: Themes in the History of Art	
ARTH-136	General Education – Global Perspective: Survey : Renaissance to Modern	
ARTH-137	General Education – Global Perspective: Survey: Arts of the Ancient Americas	
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
Choose one of the following:		3
FDTN-122	2D Design II	
FDTN-222	2D Design II Workshop: Topic	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
Second Year		
FDTN-141	4D Design	3
PAIT-201	Introduction to Painting	3
PAIT-501	Painting	3
PRNT-201	Introduction to Printmaking	3
SCUL-201	Introduction to Sculpture	3
STAR-505	Figure Drawing	3
	CAD Studio Elective†	3
	Art History Elective‡	3
	General Education – Ethical Perspective	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Third Year		
PAIT-501	Painting	6
STAR-311	Ideation and Series	3
Choose one of the following:		3
PAIT-460	Watercolor	
PAIT-561	Painting the Natural World	
PAIT-571	Painting the Figure	
	Art History Elective‡	3
	General Education – Immersion 1 (WI-GE)	3
	CAD Studio Electives†	6
	General Education – Elective	3
	Open Elective	3
Fourth Year		
PAIT-501	Painting	6
STAR-411	Business Practices for Artists (WI-PR)	3
STAR-502	STAR Capstone	3
Choose one of the following:		3
PAIT-460	Watercolor	
PAIT-561	Painting the Natural World	
PAIT-571	Painting the Figure	
	General Education – Immersion 2, 3	6
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
Students take PAIT-501 for 15 credits and choose an additional 6 credits from: PAIT-470 (Watercolor), PAIT-561 (Painting the Natural World), or PAIT-571 (Painting the Figure).
† CAD Studio Electives are College of Art and Design with a lab or studio component, per catalog restrictions.
‡ Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

Studio Arts (printmaking option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: Survey: Ancient to Medieval	3
Choose one of the following:		3
ARTH-124	General Education – Global Perspective: Survey: Themes in the History of Art	
ARTH-136	General Education – Global Perspective: Survey: History of Western Art: Renaissance to Modern	
ARTH-137	General Education – Global Perspective: Survey: Arts of the Ancient Americas	
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
Choose one of the following:		3
FDTN-122	2D Design II	
FDTN-222	2D Design II Workshop: Topic	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
Second Year		
FDTN-141	4D Design	3
PAIT-201	Introduction to Painting	3
PRNT-201	Introduction to Printmaking	3
PRNT-501	Printmaking	3
SCUL-201	Introduction to Sculpture	3
STAR-505	Figure Drawing	3
	CAD Studio Elective†	3
	Art History Elective‡	3
	General Education – Ethical Perspective	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Third Year		
PRNT-501	Printmaking	6
STAR-311	Ideation and Series	3
Choose one of the following:		3
STAR-268	Bookbinding	
STAR-468	Letterpress Printmaking	
STAR-578	Screenprinting	
	Art History Elective‡	3
	General Education – Immersion 1 (WI-GE)	3
	CAD Studio Electives†	6
	General Education – Elective	3
	Open Elective	3
Fourth Year		
PRNT-501	Printmaking	6
STAR-411	Business Practices for Artists (WI-PR)	3
STAR-401	STAR Capstone	3
Choose one of the following:		3
STAR-268	Bookbinding	
STAR-468	Letterpress Printmaking	
STAR-578	Screenprinting	
	General Education – Immersion 2, 3	6
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
Students take PRNT-501 for 15 credits and choose an additional 6 credits from: STAR-268 (Bookbinding), STAR-468 (Letterpress Printmaking), or STAR-578 (Screenprinting).
† CAD Studio Electives are College of Art and Design courses with lab or studio component, per catalog restrictions.
‡ Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

Studio Arts (sculpture option), BFA degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ARTH-135	General Education – Artistic Perspective: Survey: Ancient to Medieval	3
Choose one of the following:		3
ARTH-124	General Education – Global Perspective: Survey: Themes in the History of Art	
ARTH-136	General Education – Global Perspective: Survey: Renaissance to Modern	
ARTH-137	General Education – Global Perspective: Survey: Arts of the Ancient Americas	
FDTN-111	Drawing I	3
FDTN-121	2D Design I	3
FDTN-131	3D Design I	3
Choose one of the following:		3
FDTN-112	Drawing II	
FDTN-212	Drawing II Workshop: Topics	
Choose one of the following:		3
FDTN-122	2D Design II	
FDTN-222	2D Design II Workshop: Topic	
Choose one of the following:		3
FDTN-132	3D Design II	
FDTN-232	3D Design II Workshop: Topic	
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
Second Year		
FDTN-141	4D Design	3
PAIT-201	Introduction to Painting	3
PRNT-201	Introduction to Printmaking	3
SCUL-201	Introduction to Sculpture	3
SCUL-501	Sculpture	3
STAR-505	Figure Drawing	3
	CAD Studio Elective†	3
	Art History Elective‡	3
	General Education – Ethical Perspective	3
Choose one of the following:		3
	General Education – Natural Science Inquiry Perspective	
	General Education – Scientific Principles Perspective	
	General Education – Mathematical Perspective A or B	
Third Year		
SCUL-501	Sculpture	6
STAR-311	Ideation and Series	3
Choose one of the following:		3
SCUL-543	Foundry Practices	
SCUL-573	Figure Sculpture	
SCUL-583	Welding and Fabrication	
	Art History Elective‡	3
	General Education – Immersion 1 (WI-GE)	3
	CAD Studio Electives†	6
	General Education – Elective	3
	Open Elective	3
Fourth Year		
SCUL-501	Sculpture	6
STAR-411	Business Practices for Artists (WI-PR)	3
STAR-401	STAR Capstone	3
Choose one of the following:		3
SCUL-543	Foundry Practices	
SCUL-573	Figure Sculpture	
SCUL-583	Welding and Fabrication	
	General Education – Immersion 2, 3	6
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
Students take SCUL-501 for 15 credits and choose an additional 6 credits from: SCUL-543 (Foundry Practices), SCUL-573 (Figure Sculpture), or SCUL-583 (Welding and Fabrication).
† CAD Studio Electives are College of Art and Design courses with lab or studio component, per catalog restrictions.
‡ Art History electives are non-studio courses searchable in SIS with the Art History attribute of ARTH.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3-4 years of mathematics
- 2-3 years of science
- Studio art experience and a portfolio of original artwork are required for all programs in the School of Art.
- A portfolio must be submitted. View Portfolio Requirements for more information.

Transfer Admission

Transfer course recommendations without associate degree

Courses in studio art, art history, and liberal arts. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information.

Appropriate associate degree programs for transfer

Related programs or studio art experience in desired disciplines. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program. View Portfolio Requirements for more information. Summer courses can lead to third-year status in most programs.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Faculty

Dean's Office

Todd Jokl, BA, Yale University; MFA, University of Connecticut; Ed.D., Southern Connecticut State University—Dean, Professor

Chris B. Jackson, BFA, Alfred University; MFA, Rochester Institute of Technology—Senior Associate Dean; Professor

Christine Shank, BFA, Miami University; MFA, Texas Woman's University—Associate Dean of Undergraduate Studies; Associate Professor

John Monaco, BFA, John Herron School of Art; MFA, Maryland Institute—Visiting Lecturer

School for American Crafts

Andy Buck, BA, Virginia Commonwealth University; MFA, Rhode Island School of Design—Graduate Co-Director, School for American Crafts; Professor

Juan Carlos Caballero-Perez, BFA, MFA, Rochester Institute of Technology—Graduate Co-Director, School for American Crafts; Professor

Laurel Fulton, BA, University of Northern Colorado; MFA, University of Georgia—Assistant Professor

Rolf Hoeg, AOS, BS, Rochester Institute of Technology; MFA, Vermont College of Fine Arts—Lecturer

Elizabeth Kronfield, BFA, Bowling Green State University; MFA, University of Georgia—School Director, School of Art and School for American Crafts; Professor

Albert Paley, BFA, MFA, Temple University—Artist-in-Residence; Charlotte Fredericks Mowris Professor in Contemporary Craft; Professor

Suzanne Peck, BA, The Colorado College; MFA, Rhode Island School of Design— Charlotte Mowris Fellow; Lecturer

David Schnuckel, BFA, Anderson University; MFA, Rochester Institute of Technology—Assistant Professor

Jane Shellenbarger, BFA, Kansas City Art Institute; MFA, Southern Illinois University at Edwardsville—Undergraduate Program Director, Studio Arts; Ann Mowris Mulligan Endowed Professor; Associate Professor

School of Art

Michael Amy, BA, Vrije Universiteit Brussel (Belgium); MA, Ph.D., New York University—Professor

Donald Arday, BFA, Cleveland Institute of Art; MFA, Syracuse University—Professor

Eileen Feeney Bushnell, BFA, University of Massachusetts at Amherst; MFA, Indiana State University—Professor

Robin Cass, BFA, Rhode Island School of Design; MFA, New York State College of Ceramics at Alfred University—Professor

Denton Crawford, BFA, University of South Florida; MFA, University of Georgia—Senior Lecturer

Robert Dorsey, BFA, Rochester Institute of Technology; MFA, Syracuse University—Professor

Allen Douglas, BFA, Syracuse University; Illustration Master Class, Amherst—Lecturer

Craig Foster, BFA, University of Michigan; MS, Medical College of Georgia at Augusta University—Undergraduate Program Co-Director, Medical Illustration; Assistant Professor

Emily Glass, BFA, State University College at Potsdam; MFA, Kansas State University—Principal Lecturer

Chad Grohman, BFA, Rochester Institute of Technology; MFA, University of Hartford—Undergraduate Program Director, Illustration; Assistant Professor

Jeff Harter, BFA, State University of New York at Buffalo; MA, Syracuse University—Assistant Professor

Glen R. Hintz, BA, Lafayette College; MS, The Medical College of Georgia—Undergraduate Program Director, Medical Illustration; Associate Professor

Elizabeth Kronfield, BFA, Bowling Green State University; MFA, University of Georgia—School Director, School of Art and School for American Crafts; Professor

Christina Leung, BA, Miami University of Ohio; MFA, Cornell University—Visiting Assistant Professor

Amy McLaren, BA, Ithaca College; MFA, Rochester Institute of Technology—Senior Lecturer

Heidi Nickisher, BA, University of California at Santa Barbara; MA, California State University, Fullerton; Ph.D., University of Buffalo—Principal Lecturer

Peter Pincus, BFA, MFA, New York State College of Ceramics at Alfred University—Assistant Professor

Luvon Sheppard, BFA, MST, Rochester Institute of Technology—Professor

Sarah Thompson, BA, University of California at San Diego; MA, Ph.D., University of California at Santa Barbara—Associate Professor

Ellen Tani, BA, Dartmouth College; Ph.D., Stanford University—Assistant Professor

Henry Uhrik, BA, Kenyon College; MFA, Washington University in St. Louis—Visiting Lecturer

Alesha Williams, BFA, Columbus College of Art and Design; MFA, Kent State University—Assistant Professor

Daniel Worden, BA, Texas Christian University; MA, Ph.D., Brandeis University—Associate Professor

Clifford Wun, BFA, Rhode Island School of Design; MFA, Maryland Institute College of Art—Associate Professor

School of Design

Joseph Allgeier, BFA, Cleveland Institute of Art; MA, Case Western Reserve University; MFA, Rochester Institute of Technology—Visiting Lecturer

Rebecca Aloisio, BFA, Cleveland Institute of Art; MFA, Syracuse University—Senior Lecturer

Jason Arena, BS, University of Buffalo; MFA, Pratt Institute—Undergraduate Program Director, New Media Design; Associate Professor

Zenab Bastawala, BA, Swinburne University (Australia); MA, University of Reading (United Kingdom)—Visiting Assistant Professor

Bryce Beamer, BS, MS, Philadelphia University—Assistant Professor

Deborah Beardslee, BFA, Syracuse University; MFA, Virginia Commonwealth University—Associate Professor

Peter Byrne, MFA, York University (Canada)—Professor

Miguel A. Cardona, BFA, MFA, Rochester Institute of Technology—Assistant Professor

Graham Carson, BFA, Indiana University of Pennsylvania; MFA, Rochester Institute of Technology—Senior Lecturer

William Colgrove, BFA, MFA, Rochester Institute of Technology—Visiting Lecturer

Melissa Dawson, BS, Cornell University; MFA, Rochester Institute of Technology— Undergraduate Program Director, Industrial Design; Assistant Professor

Daniel DeLuna, BFA, Ball State University; MFA, Pratt Institute—Associate Professor

Keli DiRisio, AAS, Cazenovia College; BFA, MS, MFA, Rochester Institute of Technology—Assistant Professor

John Dyer, Certificate: Graphic Design, Graphic Careers; BS, Art Institute of Pittsburgh; MFA, Rochester Institute of Technology—Visiting Lecturer

Regina Ferrari, BFA, Wayne State University; MFA, Virginia Commonwealth University—Principal Lecturer

Carol Fillip, BS, State University of New York at Buffalo; MFA, Rochester Institute of Technology—Undergraduate Program Director, Graphic Design; Associate Professor

Shaun Foster, BBA, University of Wisconsin; MFA, Rochester Institute of Technology—Undergraduate Program Director, 3D Digital Design; Professor

Lorrie Frear, BFA, MFA, Rochester Institute of Technology—Professor

Mary Golden, BA, M.Arch., University at Buffalo—Undergraduate Program Co-Director, Interior Design; Associate Professor

Mitch Goldstein, BFA, Rhode Island School of Design; MFA, Virginia Commonwealth University—Associate Professor

Lara Goulart, BA, Universidade de Brasília (Brazil); MFA, Rochester Institute of Technology—Lecturer

David Halbstein, BA, MA, William Patterson University—Associate Professor

Joyce Hertzson, BFA, Rhode Island School of Design; MFA, Indiana University—Professor

Jennifer Indovina, BS, MBA, Rochester Institute of Technology—Visiting Lecturer

Chris B. Jackson, BFA, Alfred University; MFA, Rochester Institute of Technology—Senior Associate Dean; Professor

Gary D. Jacobs, BFA, University of Northern Colorado; MFA, Pennsylvania State University—Assistant Professor

Anne Jordan, BFA, Rhode Island School of Design; MFA, Virginia Commonwealth University—Assistant Professor

Lorraine Justice, BFA, Edinboro University; MFA, Ph.D., The Ohio State University—Dean Emerita; Professor

Maria Kane, BFA, State University College at Brockport; MFA, Rochester Institute of Techology—Visiting Lecturer

Alex Lobos, BID, Universidad Rafael Landívar (Guatemala); MFA, University of Notre Dame—School Director, School of Design; Professor

Mindy Magyar, BS, Cornell University; MFA, Cranbrook Academy of Art; MBA, University of Pennsylvania—Associate Professor

Ihab Mardini, BA, International University of Science and Technology (Syria); MFA, Rochester Institute of Technology—Assistant Professor

Michael Minerva, BA, American University—Visiting Lecturer

Gary Molinari, BFA, Rochester Institute of Technology; MS, Nazareth College of Rochester—Senior Lecturer

Hye-Jin Nae, BA, Sungshin Women's University (South Korea); BFA, University of Wisconsin; MFA, Rochester Institute of Technology—Assistant Professor

Juan Noguera, BS, Colegio Lehnsen (Guatemala); BID, Universidad Rafael Landivar (Guatemala); MID, Rhode Island School of Design—Assistant Professor

Josh Owen, BA, BFA, Cornell University; MFA, Rhode Island School of Design—Director, Vignelli Center for Design Studies; Massimo and Lella Vignelli Distinguished Professor In Design

Nayoung Park, BFA, Konukuk University (Korea); MFA, School of Visual Arts—Assistant Professor

Alejandro Perez Sanchez, BS, Art Institute of California; MFA, Academy of Art University—Assistant Professor

Mariana Pinheiro, BA, Universidade Fransciscana (Brazil); MFA, Rochester Institute of Technology—Visiting Lecturer

Aaron Powell, BFA, Rochester Institute of Technology—Visiting Lecturer

Lori Resch, BFA, University of Notre Dame; MFA, Rochester Institute of Technology—Lecturer

Stan Rickel, BID, Pratt Institute; MID, Syracuse University—Graduate Director, Industrial Design; Associate Professor

Joel Rosen, BFA, Virginia Commonwealth University; MFA, Rochester Institute of Technology—Lecturer

Stephen Scherer, BFA, Bradley University—Lecturer

Heidi Schlegel, BFA, Rochester Institute of Technology; MS, University of Nebraska-Lincoln—Undergraduate Program Co-Director, Interior Design; Associate Professor

Anna Schum-Houck, BFA, Rochester Institute of Technology; MA, Cambridge School of Visual & Performing Arts (United Kingdom)—Visiting Lecturer

Amos Scully, BFA, Rochester Institute of Technology; MFA, California College of Arts and Crafts—Associate Professor

Adam Smith, BFA, MFA, Rochester Institute of Technology—Associate Professor

Michael Strobert, BFA, MFA, Rochester Institute of Technology—Graduate Director, Visual Communication Design; Senior Lecturer

Philip Szrama, BS, State University College at Geneseo; MFA, Rochester Institute of Technology—Assistant Professor

Marissa Tirone, B.Arch., University of Kentucky; M.Arch., Cornell University—Principal Lecturer

Isabella Trindade, B.Arch, M.Arch, Universidade Federal de Pernambuco, (Brazil); PhD, Universitat Politècnica de Catalunya (Spain)—Lecturer

Javier A. Viramontes, BFA, The University of Texas-Austin—Visiting Lecturer

Melissa Warp, BFA, University of Minnesota, MFA, Rochester Institute of Technology—Senior Lecturer

School of Film and Animation

Amy Adrion, BA, Georgetown University; MFA, University of California, Los Angeles—Assistant Professor

Vashti Anderson, BA, University of Wisconsin-Madison; MFA, New York University—Assistant Professor

Meghdad Asadilari, BSc, MSc, Shiraz University (Iran); MFA, Rochester Institute of Technology—Assistant Professor

Christine A. Banna, BFA, Boston University; MFA, Tufts University—Senior Lecturer

Kevin Bauer, BFA, State University College at Oneonta; MFA, Rochester Institute of Technology—Graduate Director, Film and Animation; Senior Lecturer

Jack Beck, BA, Denison University; MFA, University of Iowa—Undergraduate Program Director, Production; Professor

Mari Jaye Blanchard, BFA, Massachusetts College of Art & Design; MFA, University of Pennsylvania School of Design—Associate Professor

Michael Boas, BA, State University of New York at Geneseo—Visiting Lecturer

Frank Deese, BA, MFA, University of California, Los Angeles—Assistant Professor

Alexis E. Deprey, BFA, University of Connecticut—Visiting Lecturer

Ricardo Figueroa, BS, MS, University of Puerto Rico at Mayagüez (Puerto Rico); Ph.D., Rochester Institute of Technology—Undergraduate Program Director, Motion Picture Science; Associate Professor

Tom Gasek, BFA, Rochester Institute of Technology; MFA, Art Institute of Boston—Professor

Brian Larson, BFA, Colorado State University; MFA, Miami International University—Undergraduate Program Director, Animation; Associate Professor

David Long, BS, University of Texas; MS, University of Rochester—Director, RIT MAGIC Center and MAGIC Spell Studios; Associate Professor

Linda Moroney, BA, Hofstra University—Visiting Lecturer

Peter Murphey, BFA, Massachusetts College of Art; MFA, The Art Institute of Boston—Senior Lecturer

Atia Newman, BFA, National College of the Arts, Lahore (Pakistan); MFA, Pratt Institute—Associate Professor

Jesse O'Brien, BS, The Art Institute of Pittsburgh; MFA, The Academy of Art University—Assistant Professor

Mark Reisch, BFA, Savannah College of Art and Design; Advanced Studies in Animation Certificate, AnimationMentor.com; MFA, Rochester Institute of Technology—Associate Professor

Jonathan Seligson, BFA, Rhode Island School of Design; MFA, California Institute of the Arts—Lecturer

David Sluberski, BA, State University College at Fredonia—Principal Lecturer

Andrew Sonntag, BA, Catholic University of America; MA, American University; MFA, Rochester Institute of Technology—Assistant Professor

Vanessa Sweet, BFA, The University of the Arts; MFA, California Institute of the Arts—Assistant Professor

Shanti Thakur, BA, Ottawa University; BA, Concordia University; MFA, Temple University—School Director, School of Film and Animation; Professor

Munjal Yagnik, BFA, MFA, Syracuse University—Associate Professor

School of Photographic Arts and Sciences

Kristy Boyce, BFA, Ryerson University (Canada); MFA, OCAD University (Canada)—Assistant Professor

Meredith Davenport, BFA, Rochester Institute of Technology; MFA, Hunter College—Undergraduate Program Director, Photojournalism; Associate Professor

Rachel Ferraro, BFA, Rochester Institute of Technology; MFA, Visual Studies Workshop—Associate Professor

Gregory Halpern, BA, Harvard University; MFA, California College of the Arts—Associate Professor

Gregory Hayes, BA, Northeastern University; MFA, California Institute of the Arts—Visiting Lecturer

Daniel Hughes, BFA, Rochester Institute of Technology—Undergraduate Program Director, Photographic Sciences; Lecturer

Ted Kinsman, BS, University of Oregon; MS, Syracuse University—Associate Professor

Susan Lakin, BFA, Art Center College of Design; MFA, University of California—Professor

Dan Larkin, BFA, Rochester Institute of Technology; MFA, Bard College—Associate Professor

Clay Patrick McBride, BFA, MPS, School of Visual Arts—Senior Lecturer

Joshua Rashaad McFadden, BA, Elizabeth City State University; MFA, Savannah College of Art and Design—Assistant Professor

Josh Meltzer, BA, Carleton College; MA, University of Miami—Associate Professor

Therese Mulligan, BA, University of Missouri-Kansas City; MA, Michigan State University; Ph.D., University of New Mexico—Professor

Laurie O'Brien, BA, San Francisco State University; MFA, California Institute of the Arts—James E. McGhee Fellow; Associate Professor

Juan Orrantia, MFA, University of Hartford; Ph.D., Yale University—Assistant Professor

Ahndraya Parlato, BA, Bard College; MFA, California College of the Arts—Dr. Ronald Francis/Mabel Francis Chair in Silver-Halide Imaging Systems; Senior Lecturer

Michael R. Peres, BA, Bradley University; BS, MS, Rochester Institute of Technology—Professor

Jennifer Poggi, BS, Syracuse University; MA, Ohio University—Associate Professor

James Porto, BS, Rochester Institute of Technology; MFA, School of Visual Arts—Assistant Professor

Robert Rose, BS, Rochester Institute of Technology; M.Ed., American InterContinental University—Graduate Director, Media Arts and Technology; Associate Professor

Nanette Salvaggio, BS, Rochester Institute of Technology—Lecturer

Christine Shank, BFA, Miami University; MFA, Texas Women's University—Associate Dean of Undergraduate Studies; Associate Professor

Christye Sisson, BS, MS, Rochester Institute of Technology—School Director, School of Photographic Arts and Sciences; Gannett Distinguished Professor

William Snyder, BS, Rochester Institute of Technology—Undergraduate Program Director, Advertising Photography; Professor

Josh Thorson, BA, University of Minnesota-Twin Cities; MFA, Bard College; Ph.D., Rensselaer Polytechnic Institute—Graduate Director, Photography and Related Media; Associate Professor

Carole Woodlock, BFA, Alberta College of Arts (Canada); MFA, Concordia University—Professor

Catherine Zuromskis, BA, Harvard College; MA, University of New York at Stony Brook; MA, Ph.D., University of Rochester—Undergraduate Program Director, Fine Art Photography; Associate Professor

Distinguished Professorships

Ann Mowris Mulligan Distinguished Professorship in Contemporary Crafts

Established: 1999

Donor: Ann Mowris Mulligan

Purpose: The holder must have a distinguished record of excellent teaching, wide recognition as a renowned artist, and a demonstrated commitment to students' career development in the craft industry.

Held by: Jane Shellenbarger

Dr. Ronald Francis/Mabel Francis Professorship in Silver-Halide Imaging Systems

Established: 1993

Donor: Mabel Francis

Purpose: To establish an endowed professorship in the School of Photographic Arts and Sciences

Held by: Ahndraya Parlato

Gannett Distinguished Professor

Established: 1987

Donor: Gannett Foundation

Purpose: The distinguished professor is engaged in research and academic study to address problems in the news and information business.

Held by: Christye Sisson

Charlotte Fredericks Mowris Professorship in Contemporary Crafts

Established: 1973

Donor: Mrs. Charles F. Mowris

Purpose: To perpetuate interest in the School for American Crafts through the work of faculty and students as talented craftspeople.

Held by: Albert Paley

Melbert B. Cary Jr. Professorship in Graphic Arts

Established: 1969

Donor: Mary Flagler Cary Charitable Trust

Purpose: To provide a permanent memorial for Mr. Cary, a former president of the American Institute of Graphic Arts, and to perpetuate his interest in the field.

Held by: Open

James E. McGhee Professorship in Photographic Management

Established: 1967

Donor: Photo Marketing Association (formerly Master Photodealers and Finishers Association), Kodak, and friends of M. McGhee

Purpose: To provide a permanent memorial for Mr. McGhee, a former vice president of Eastman Kodak Company and lifelong friend of the photofinishing industry.

Held by: Open

The Massimo and Lella Vignelli Distinguished Professor in Design

Established: 2010

Donor: The Helen Hamlyn Trust

Purpose: To extend the values and principles implicit in the work and careers of Massimo and Lella Vignelli to the next generation of designers.

Held by: Josh Owen

Saunders College of Business

Jacqueline R. Mozrall, Dean
saunders.rit.edu

Programs of study

Combined Accelerated Bachelor's/Master's Degree available

Success in today's business environment requires leadership and management attuned to rapid changes in technology and increasingly vigorous global competition. Saunders College of Business offers a portfolio of comprehensive, rigorous programs of study. Our curriculum produces graduates who are able to convert managerial learning into pragmatic business applications.

To achieve these educational aims, Saunders College offers academic programs comprised of four components: business core courses, a program of study, required liberal arts courses, and cooperative education experience. The liberal arts component includes courses in the humanities, mathematics, science, and social sciences. Students are expected to display proficiency in oral and written forms of communication, and to choose a liberal arts concentration or minor. Please visit the college's website–**saunders.rit.edu**–for in depth information on academics, admisison requirements, faculty, facilities, financial aid and scholarships, research initiatives, advising services, and more.

Accreditation

Saunders College is accredited by the nationally recognized Association to Advance Collegiate Schools of Business (AACSB International), the premier accrediting agency for schools of business in the U.S.

Accounting, BS

www.rit.edu/study/accounting-bs
Matthew Cornwell,
585-475-6916, mcornwell@saunders.rit.edu

Program overview

Accountants are multidisciplinary professionals. They are responsible for determining an organization's overall wealth, profitability, and liquidity. Without accounting, organizations would have no foundation upon which daily and long-term business decisions could be made.

What is Accounting?

From technology and entertainment and travel and government, accounting is a key function to all businesses. It's the collection, organization, and analysis of data that can reveal the financial state of a business. It can tell a company how well its products and services are performing, and if the products are making a profit. Financial data can help accountants make short- and long-term projections and estimate an organization's tax liabilities. Accounting also helps an organization plan for its future. Short- and long-term profit projections can help guide an organizations' growth and in which areas new employees will be needed. It can also help guide decision-making on which product lines to change and grow and which to downsize or eliminate. Accounting is essential to understanding which areas of your business are making money and which are not.

Explore RIT's Accounting Degree Curriculum

RIT's BS accounting degree covers financial and managerial accounting disciplines, while:

- Introducing you to the technology used within the profession
- Exposing you to courses in the liberal arts, sciences, and management
- Leveraging our nationally ranked management information systems (MIS) major to give you the technical skills needed to design, operate, and control accounting information systems

Accounting Certifications: How to Become a CPA

The accounting bachelor's degree starts you on the right path to completing specific requirements of the Certified Public Accountant (CPA) certification. Additional graduate work is required in order to fulfill New York State CPA exam requirements. Students who complete the 24-credit hour minimum at the bachelor's degree level will need to complete at least nine credit-hours of graduate accounting courses in order to meet the requirements to sit for the exam. Students completing 30 undergraduate-level accounting credit hours may only need one graduate accounting course to meet NYS CPA exam eligibility rules.

While the CPA license is not required to work in the field of accounting it is highly recommended for students. Learn more about becoming a CPA, CPA requirements, the CPA Exam, and other certifications.

The BS accounting program prepares students for success, as demonstrated by CPA Exam passing rates for RIT students that are consistently above passing rates overall and for all New York state candidates.

Furthering Your Education in Accounting

RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years, giving you a competitive advantage.

- The Accounting BS/Accounting and Analytics MS: Gain a solid accounting background and enhance your knowledge of the accounting technologies that will help you analyze an organization's data so you can gain significant insights, predict future outcomes, and ascertain risk.
- +1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the accounting bachelor's degree as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway adds a competitive advantage to your studies.
- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-op takes your knowledge and turns it into know-how. Business co-ops provide hands-on experience that enables you to apply your knowledge of business, management, finance, accounting, and related fields in professional settings. You'll make valuable connections between course work and real-world applications as you build a network of professional contacts.

Students in the accounting BS are required to complete at least one cooperative education experience.

Accounting Career Fair

RIT's Office of Career Services and Cooperative Education hosts an accounting-specific career fair that connects accounting majors with employers in finance and banking. During this day-long event, you'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Accounting, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ACCT-110	Financial Accounting	3
ACCT-210	Management Accounting	3
ECON-101	Principles of Microeconomics (General Education – Global Perspective)	3
ECON-201	Principles of Macroeconomics (General Education)	3
INTB-225	Global Business Environment (General Education)	3
MGIS-130	Information Systems & Technology	3
MGMT-101	Business 1: Introduction to Business Communication, Planning & Analysis	3
MGMT-102	Business 2: Business Planning and Professional Development	1
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
MATH-161	Applied Calculus (General Education)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
Second Year		
ACCT-305	Accounting Profession	1
ACCT-360	Intermediate Financial Accounting I	3
ACCT-445	Accounting Information Systems	3
BLEG-250	Law, Business, and Society (General Education)	3
COMM-253	Communication (General Education)	3
FINC-220	Financial Management	3
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
MGMT-215	Organizational Behavior	3
MKTG-230	Principles of Marketing	3
	General Education – Artistic Perspective	3
	Accounting Elective	3
Third Year		
ACCT-365	Intermediate Financial Accounting II	3
ACCT-420	Personal and Small Business Taxation	3
ACCT-499	Accounting Co-op (summer)	0
BANA-255	Data Literacy, Analytics, and Decision Making (General Education)	3
DECS-310	Operations Management	3
MGMT-340	Business Ethics and Corporate Social Responsibility (General Education – Ethical Perspective)	3
	Open Elective	3
	General Education – Natural Science Inquiry Perspective†	3
	General Education – Scientific Principles Perspective	3
	General Education Immersion 1, 2	6
Fourth Year		
ACCT-430	Cost Accounting (WI-PR)	3
ACCT-490	Auditing	3
MGMT-560	Strategic Management	3
	General Education – Social Perspective	3
	General Education – Immersion 3	3
	Open Electives	9
	General Education – Electives	6
Total Semester Credit Hours		**124**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Combined Accelerated Bachelor's/Master's Degree

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Accounting, BS degree/Accounting and Analytics, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ACCT-110	Financial Accounting	3
ACCT-210	Management Accounting	3
ECON-101	Principles of Microeconomics (General Education – Global Perspective)	3
ECON-201	Principles of Macroeconomics (General Education – Elective)	3
INTB-225	Global Business Environment (General Education – Elective)	3
MATH-161	Applied Calculus (General Education – Elective)	4
MGIS-130	Information Systems & Technology	3
MGMT-101	Business 1: Introduction to Business Communication, Planning & Analysis	3
MGMT-102	Business 2: Business Planning and Professional Development	1
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
Second Year		
ACCT-305	Accounting Profession	1
ACCT-360	Intermediate Financial Accounting I	3
ACCT-365	Intermediate Financial Accounting II	3
BLEG-250	Law, Business, and Society (General Education – Elective)	3
COMM-253	Communication (General Education – Elective)	3
FINC-220	Financial Management	3
MGMT-215	Organizational Behavior	3
MKTG-230	Principles of Marketing	3
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
	Accounting Elective	3
	General Education – Artistic Perspective	3
Third Year		
ACCT-420	Personal and Small Business Taxation	3
ACCT-430	Cost Accounting (WI-PR)	3
BANA-255	Data Literacy, Analytics, and Decision Making	3
DECS-310	Operations Management	3
MGMT-340	Business Ethics and Corporate Social Responsibility (General Education – Ethical Perspective)	3
	General Education – Natural Science Inquiry Perspective†	3
	General Education – Scientific Principles Perspective	3
	General Education – Immersion 1, 2	6
	Open Elective	3
Fourth Year		
ACCT-490	Auditing	3
ACCT-745	Accounting Information and Analytics	3
MGMT-560	Strategic Management	3
	General Education – Electives	6
	General Education - Immersion 3	3
	General Education - Social Perspective	3
	Open Electives	9
Fifth Year		
ACCT-710	Tax Analysis and Strategy	3
ACCT-738	Information Systems Auditing and Assurance Services	3
ACCT-740	Comparative Financial Statement Analysis	3
ACCT-745	Accounting Information and Analytics	3
ACCT-796	Accounting Capstone Experience	3
FINC-780	Financial Analytics	3
MGIS-650	Introduction to Data Analytics and Business Intelligence	3
	Graduate Electives	6
Total Semester Credit Hours		**151**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.
‡ Students must also complete one semester of cooperative education.

Accreditation

Saunders College of Business undergraduate and graduate programs are fully accredited by the Association to Advance Collegiate Schools of Business (AACSB) International, the premier accrediting organization for business schools. Less than five percent of the institutions granting business degrees have received this accreditation.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science

Transfer Admission

Transfer course recommendations without associate degree

Courses in economics, accounting, liberal arts, science, and mathematics

Appropriate associate degree programs for transfer

AS degree in accounting or business administration

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Business Exploration

www.rit.edu/study/business-exploration
Matthew Cornwell,
585-475-6916, mcornwell@saunders.rit.edu

Program overview

Are you interested in pursuing a career in business, but uncertain as to which major best fits your personal and professional goals? Business exploration might be the best fit for you.

Majoring in Business: How to Decide on a Degree

Business exploration is for students who are not yet ready to declare a business major and need more time to explore different business disciplines to better understand which major bests meets their interests and career goals. It's designed to keep you on track for graduation while you explore entry-level courses in RIT's seven business majors: accounting, finance, global business management, hospitality and tourism management, management information systems, marketing, or supply chain management.

In business exploration, you can take up to a year and a half to complete course work in general business topics while you explore foundation courses in several of the business majors that interest you most. In your first-year, you will be encouraged to talk with RIT faculty, staff, and our career advisors to help you learn about our different business majors as you determine which areas of business interest you most. Advisors provide guidance throughout your time in the option and will assist you in course selection and in declaring a major.

The Freshman Experience: Biz 1+2

Students pursuing business exploration will participate in The Freshman Experience: Biz 1+2, a two course, two semester experience where all business students participate as first-year students, together as a cohort. This is a unique aspect of a business degree at Saunders College of Business. At many business schools, students do not take business courses until their second or third year of study. In Biz 1+2, you will build business plans from concept to commercialization while being exposed to a variety of different disciplines. The experience allows you to confirm your choice of major, change your major, or pursue a double major.

Curriculum

Business exploration, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ACCT-110	Financial Accounting	3
MATH-161	Applied Calculus	4
MGIS-130	Information Systems and Technology	3
MGMT-101	Business 1: Introduction to Business Communication, Planning & Analysis	3
MGMT-102	Business 2: Business Planning and Professional Development	1
ECON-101	Principles of Microeconomics	3
ECON-201	Principles of Macroeconomics	3
STAT-145	Introduction to Statistics I	3
STAT-146	Introduction to Statistics II	4
ACCT-210	Management Accounting	3
YOPS-10	RIT 365: RIT Connections	0
	General Education- First Year Writing	3
	Wellness Education*	0
Total Semester Credit Hours		**33**

* Please see Wellness Education Requirements for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Finance, BS

www.rit.edu/study/finance-bs

Matthew Cornwell,
585-475-6916, mcornwell@saunders.rit.edu

Program overview

Explore the management, creation, and study of money, banking, investments, assets, and liabilities, and the impact of technology on financial systems, cash-flow analysis, capital markets, financial decision-making, and forecasting. This is the exciting world of finance.

What is Finance?

Finance is more than tracking a budget. It is the art and science of managing cash flows, risk, and ultimately, value. Finance functions include corporate finance, budgeting, investment management, risk management, and valuation. Financial expertise determines the optimal management of money and the generation of value for clients.

RIT's Finance Degree

The world's financial markets are globally integrated. As a result, you need a finance degree that prepares you with a global understanding of financial markets, how they are integrated, and how they impact the business world.

In RIT's finance degree, you'll learn about the management, creation, and study of money, banking, investments, assets, and liabilities. You'll become familiar with financial systems, which include the public, private, and government spaces, and have the opportunity to become an expert in cash-flow analysis, capital markets, financial decision-making, or forecasting. Set yourself a part with a finance degree that:

- Emphasizes the use of Big Data: You'll gain the data analytics skills to manage and analyze an organization's data to understand and forecast financial trends.
- Provides unparalleled access to technology: The state-of-the-art Sklarsky Center for Business Analytics features 12 Bloomberg terminals that connect you to Bloomberg technologies that track corporate financial data in real-time.
- Enables you to manage a real investment portfolio: In the student chapter of the Financial Management Association you'll actively manage a real $180,000+ portfolio.
- Prepares you to today's finance careers: Graduates are analytics-driven and skilled in making keen decisions by evaluating historical data and market performance forecasts.

Finance Courses

The finance degree includes foundational courses in accounting, management, business planning, financial management, organizational behavior, and more. In addition, you'll study advanced finance courses in investments, financial analysis, and strategic management. Finance electives enable you to select courses for more in-depth study in areas such as options and futures, business law, financing new ventures, financial analytics, and more. You will also spend time monitoring markets and analyzing financial trends in the Sklarsky Center for Business Analytics, which features Bloomberg Terminals and the latest in finance-based technology, computing power, and software.

Careers in Finance

RIT's finance degree prepares you for management positions in financial, commercial, industrial, and governmental organizations. You will learn the principles of financial decision-making as you build an understanding of the economic, legal, and financial environment in which these principles operate. Careers in finance can be found in all types of sectors, including government, industry, service, and not-for-profit organizations.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in finance as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops take your knowledge and turn it into know-how. Business co-ops provide hands-on experience that enables you to apply your knowledge of business, management, finance, accounting, and related fields in professional settings. You'll make valuable connections between course work and real-world applications as you build a network of professional contacts.

Students in the finance degree are required to complete at least one block of cooperative education.

Curriculum

Finance, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ACCT-110	Financial Accounting	3
ACCT-210	Management Accounting	3
ECON-101	Principles of Microeconomics (General Education – Global Perspective)	3
ECON-201	Principles of Macroeconomics (General Education)	3
INTB-225	Global Business Environment (General Education)	3
MGIS-130	Information Systems & Technology	3
MGMT-101	Business 1: Ideas and Business Planning	3
MGMT-102	Business 2: Business Planning and Professional Development	1
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
MATH-161	Applied Calculus (General Education)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
Second Year		
BANA-255	Data Literacy, Analytics, and Decision Making (General Education)	3
COMM-253	Communication (General Education)	3
FINC-220	Financial Management	3
FINC-352	Financial Management II (WI-PR)	3
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B:)	4
SCBI-035	Careers in Business	0
MGMT-215	Organizational Behavior	3
MKTG-230	Principles of Marketing	3
	Finance Elective	3
	General Education – Artistic Perspective	3
	Open Elective	3
Third Year		
DECS-310	Operations Management	3
FINC-362	Intermediate Investments	3
FINC-460	Financial Analysis and Modeling	3
FINC-499	Finance Co-op (summer)	0
MGMT-340	Business Ethics and Corporate Social Responsibility (General Education – Ethical Perspective)	3
	General Education – Immersion 1, 2	6
	General Education – Natural Science Inquiry Perspective†	3
	General Education – Scientific Principles Perspective	3
	Finance Electives	6
Fourth Year		
MGMT-560	Strategic Management	3
	Finance Elective	3
	Open Electives	9
	General Education – Elective	9
	General Education – Immersion 3	3
	General Education - Social Perspective	3
Total Semester Credit Hours		**123**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Finance Electives

ACCT-489	Seminar in Accounting
ACCT-550	Accounting for Government and Not-for-profit Organizations
ACCT-560	Forensic Accounting and Fraud Examination
BLEG-250	Law, Business, and Society
FINC-320	Professional Financial Planning and Management
FINC-361	Financial Institutions and Markets
FINC-420	Finance in a Global Environment
FINC-425	Stock Market Algorithmic Trading
FINC-470	Introduction to Options and Futures
FINC-489	Seminar in Finance
FINC-559	Financing New Ventures
FINC-580	Financial Analytics

Accreditation

Saunders College of Business undergraduate and graduate programs are fully accredited by the Association to Advance Collegiate Schools of Business (AACSB) International, the premier accrediting organization for business schools. Less than 5 percent of the institutions granting business degrees have received this accreditation.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science

Transfer Admission

Transfer course recommendations without associate degree

Courses in economics, accounting, liberal arts, science, and mathematics

Appropriate associate degree programs for transfer

AS degree in accounting or business administration

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Global Business Management, BS

www.rit.edu/study/global-business-management-bs
Matthew Cornwell,
585-475-6916, mcornwell@saunders.rit.edu

Program overview

RIT's BS in Global Business Management

This bachelor of science in global business management builds a T-shaped professional, who is characterized by a deep disciplinary knowledge and an understanding of the professional and personal skills that transcend disciplines. In this program, you will:

- Gain an understanding of solution-based thinking with a curriculum that features a strong emphasis on design thinking.
- Develop cross-cultural teamwork and management skills through various team projects with peers from partner universities and RIT's global campuses.
- Engage in opportunities to participate in DECA competitions and conferences.

BS in Global Business Management Curriculum

The BS in global business management curriculum provides both depth and flexibility through management courses that emphasize:

- Operations management
- Strategic management
- Leading cross-cultural teams
- Communication
- Critical reasoning

In addition to a foundation in business management, you will also choose a concentration in:

- Entrepreneurship
- Leadership
- Supply chain management

Global Business Management Rotation: Study Abroad at RIT Croatia and RIT Dubai

The global business management rotation is an immersive experience in which you will participate with a cohort of students to gain a global perspective of business and commerce by studying international business on three continents:

- RIT: The majority of your course work will occur on RIT's main campus in Rochester, N.Y.
- RIT Croatia: You'll spend the spring semester of your second year at RIT Croatia, in Zagreb, the country's capital and a center for international trade and business.
- RIT Dubai: Spend the spring semester of your third year at the RIT Dubai's strategically located campus in Dubai Silicon Oasis, one of the world's leading business centers for advanced electronic innovation and design.

Hands-On Experience Equals Real-World Skills

Students in the global business management major have the opportunity to complete at least one semester of paid cooperative education experience. These business co-ops enable you to gain career experience in a range of industries to prepare you to become a competitive, marketable candidate for positions once you graduate.

Furthering Your Education Global Business Management

RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years, giving you a competitive advantage.

- +1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in global business management as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.
- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops take your knowledge and turn it into know-how. Business co-ops provide hands-on experience that enables you to apply your knowledge of business, management, finance, accounting, and related fields in professional settings. You'll make valuable connections between course work and real-world applications as you build a network of professional contacts.

Students in the global business management degree are required to complete at least one block of cooperative education.

Curriculum

Global Business Management, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ACCT-110	Financial Accounting	3
ACCT-210	Management Accounting	3
ECON-101	Principles of Microeconomics (General Education – Global Perspective)	3
ECON-201	Principles of Macroeconomics (General Education)	3
INTB-225	Global Business Environment (General Education)	3
MATH-161	Applied Calculus (General Education)	4
MGIS-130	Information Systems & Technology	3
MGMT-101	Business 1: Introduction to Business Communication, Planning & Analysis	3
MGMT-102	Business 2: Business Planning and Professional Development	1
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
Second Year		
BANA-255	Data Literacy, Analytics, and Decision Making (General Education)	3
COMM-253	General Education – Elective: Communication (General Education)	3
FINC-220	Financial Management	3
MGMT-215	Organizational Behavior	3
MGMT-340	Business Ethics and Corporate Social Responsibility (General Education - Ethical Perspective)	3
MKTG-230	Principles of Marketing	3
SCBI-035	Careers in Business	0
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
	General Education – Artistic Perspective	3
	Global Business Management Elective	3
	Open Elective	3
Third Year		
DECS-310	Operations Management	3
DECS-350	Project Management	3
MGMT-310	Leading Cross-Cultural & Virtual Teams (WI-PR)	3
Choose one of the following:		3
HRDE-386	Human Resources Development	
MGMT-450	Negotiations and Decision-Making	
Choose one of the following:		0
INTB-499	International Business Co-op (summer)	
MGMT-499	Management Co-op (summer)	
	Global Business Management Elective	3
	General Education – Immersion 1, 2	6
	General Education – Natural Science Inquiry Perspective †	3
	General Education – Scientific Principles Perspective	3
	Open Elective	3
Fourth Year		
INTB-550	Competing Globally	3
MGMT-560	Strategic Management	3
	General Education - Social Perspective	3
	General Education – Electives	9
	General Education – Immersion 3	3
	Global Business Management Elective	3
	Open Electives	6
Total Semester Credit Hours		**123**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Approved Global Business Management Electives

COMM-304	Intercultural Communication
DECS-435	Supply Chain Management Fundamentals
FINC-420	International Finance
INTB-315	Exporting and Global Sourcing
INTB-480	Specialized Topics in Global Business
INTB-489	Seminar in International Business
MGIS-360	Building a Web Business
MGIS-429	Cyber: Risk and Resilience
MGMT-330	Design Thinking and Concept Development
MGMT-350	Entrepreneurship
MGMT-470	Applied Entrepreneurship and Commercialization
MGMT-489	Seminar in Management
MKTG-320	Digital Marketing
MKTG-330	Global Marketing
MKTG-365	Marketing Analytics

Accreditation

Saunders College of Business undergraduate and graduate programs are fully accredited by the Association to Advance Collegiate Schools of Business (AACSB) International, the premier accrediting organization for business schools. Less than 5 percent of the institutions granting business degrees have received this accreditation.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science

Transfer Admission

Transfer course recommendations without associate degree

Courses in economics, accounting, liberal arts, science, and mathematics

Appropriate associate degree programs for transfer

AS degree in accounting or business administration

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Hospitality and Tourism Management, BS

www.rit.edu/study/hospitality-and-tourism-management-bs
Matthew Cornwell,
585-475-6916, mcornwell@saunders.rit.edu

Program overview

The hospitality and tourism degree provides an in-depth understanding of the hospitality and tourism industry and prepares you to enter any segment of the industry, including food and beverage management, hotel/resort management, travel management, food marketing and distribution, cruise line operations, resorts and spas, event management, and airline catering.

RIT's Hospitality and Tourism Management Curriculum

RIT's hospitality and tourism management major includes a comprehensive core curriculum that provides you with a strong foundation in the core principles of hospitality, service management, and tourism operations.

You'll develop an essential set of skills to successfully manage the operations of all types of hospitality venues across all industry sectors, including:

- Operations analysis
- Project management
- Food safety
- Traditional and digital marketing
- Facilities management
- Strategic planning
- Information systems
- Real estate
- Human resource management

You can customize the hospitality management degree around your personal career aspirations and interests by creating a three-to-five course sequence from disciplines from across RIT's nine colleges. Courses in innovation, entrepreneurship, marketing, finance, packaging science, web design and development, and more expand upon the major's core courses and create opportunities for you to engage in hotel management, hospitality and tourism, and restaurant management in new, exciting ways.

Technology and Hospitality: No Better Place than RIT

Among the biggest evolutions in the hospitality field is the impact of technology on the guest experience, food service and delivery, and more. Technology, along with data analytics, is driving how resorts, restaurants, theme parks, and cruise lines are interacting with guests and managing their expectations. From apps that help plan and manage guest experiences, to wearables that unlock guest room doors, to online check-in and food ordering, today's hospitality professionals must be knowledgeable of how the latest technology is being used to improve the guest experience.

One of the most unique benefits of RIT's hospitality and tourism management major is the collaboration between the program and RIT's high-tech majors in computing and engineering. The latest innovations in hospitality – mobile reservations and check-in for hotels and flights, contactless ordering and restaurant kiosks, and more – are occurring at the interesting of these dynamic disciplines, and you have a front row seat to collaborating on the design and development of the next innovations in hospitality.

Hospitality and Tourism Management Study Abroad Programs

The BS in hospitality and tourism management is also offered at RIT Croatia, one of RIT's global campuses. Located in Dubrovnik, Croatia, RIT Croatia is in the center of one of the most prominent tourist destinations in the Mediterranean Sea. You have the option to complete a:

- A 10-day study experience
- Semester-long study abroad experience

Both of these opportunities enable you to learn about the hospitality and tourism challenges and opportunities in Croatia as you study international hotel and resort management.

Hands-On Experience to Gain Real-World Skills

Students enrolled in the hospitality and tourism management undergraduate program will gain invaluable hands-on experience in a variety of ways:

- A senior capstone projectallows you to tackle a hospitality industry problem and propose an innovative solution.
- Hospitality management experiences at more than 20 on-campus dining locations.
- The RIT Inn and Conference Center, and the newly acquired Radisson Hotel, offer world-class, off-campus facilities to gain hands-on experience in hospitality management.
- A combined 1,200 hours of paid cooperative education and internship experience in the hospitality field.

Furthering Your Education in Hospital and Tourism Management

RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years, giving you a competitive advantage.

- +1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in hospitality and tourism management as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.
- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Continue your studies at RIT with our MS degree in hospitality business management, where you can continue to advance your hospitality management skills with a master's degree focused on cutting-edge analytics and technology skills, positioning you to pursue leadership positions. This master's degree also enables you to develop a secondary focus in a range of areas, including finance, digital marketing, entrepreneurship, human resources, supply chain management, or data management.

Jobs in Hospitality and Tourism

Hospitality and tourism is a massive global industry. According to the World Travel & Tourism Council, one in five jobs created globally over the last ten years has been in travel, hospitality, and tourism.

The industry is looking for professionals who are adept at integrating technology and innovation into hospitality. Graduates are employed in a range of positions across all areas of the industry. Some work in guest-contact or direct guest-service as food service managers and owners of restaurants, event and catering companies, institutional food service organizations, or in hotel/resort/travel management for hotels, resorts, cruise lines, managed-care facilities, theme parks, and more.

Graduates also find themselves sought-after by related industries such as the retail sector (banking and investment organizations), hospitals and managed-care facilities, and vendor companies (such as Ecolab, Oracle). The global nature of the industry provides excellent opportunities for graduates who want to pursue a career in international hospitality, service management, tourism, and more.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops take your knowledge and turn it into know-how. Business co-ops provide hands-on experience that enables you to apply your knowledge of business, management, finance, accounting, and related fields in professional settings. You'll make valuable connections between course work and real-world applications as you build a network of professional contacts.

Students in the hospitality management degree are required to complete a combined 1,200 hours of practical cooperative education experience with classroom theory. In co-op placements, students work directly in the hospitality industry in a variety of positions and organizations. Co-op is usually completed in the summer following the freshman and sophomore years and during any semester in the junior and senior years, except the final semester of the senior year, when students are required to be in residence on campus. Co-op is planned, monitored, and evaluated by the student, the co-op counselor, the faculty adviser, and the employing firm.

Curriculum

Hospitality and Tourism Management, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ACCT-110	Financial Accounting	3
ACCT-210	Management Accounting	3
BANA-255	Data Literacy, Analytics, and Decision Making (General Education)	3
ECON-101	Principles of Microeconomics (General Education – Global Perspective)	3
ECON-201	Principles of Macroeconomics (General Education)	3
INTB-225	Global Business Environment (General Education)	3
MATH-161	Applied Calculus (General Education)	4
MGIS-130	Information Systems & Technology	3
MGMT-101	Business 1: Introduction to Business Communication, Planning & Analysis	3
MGMT-102	Business 2: Business Planning and Professional Development	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3

COURSE		SEMESTER CREDIT HOURS
Second Year		
HSPT-215	Principles of Food Production and Service	3
HSPT-225	Hospitality and Tourism Management Fundamentals	3
HSPT-315	Lodging Operations Analytics and Management	3
HSPT-335	Food and Beverage Management	3
MGMT-215	Organizational Behavior	3
MKTG-230	Principles of Marketing	3
NUTR-215	Foundations of Nutrition Sciences	3
SCBI-035	Careers in Business	0
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
	General Education – Natural Science Inquiry Perspective	4
	General Education – Elective	3
Third Year		
COMM-253	Communication	3
DECS-310	Operations Management	3
FINC-220	Financial Management	3
HSPT-375	Customer Experience Management	3
HSPT-485	Restaurant and Event Management	4
HSPT-499	HSPT Co-op (summer)	0
MGMT-340	Business Ethics and Corporate Social Responsibility (General Education – Ethical Perspective)	3
STAT-146	General Education – Mathematical Perspective B: STAT - 146 Introduction to Statistics II	4
	General Education – Immersion 1	3
	Open Elective	3
	Hospitality Elective	2
Fourth Year		
HSPT-495	Hospitality Project Planning and Development (WI-PR)	3
MGMT-560	Strategic Management	3
	General Education – Immersion 2,3	6
	Open Electives	9
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective	3
Total Semester Credit Hours		**124**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science

Transfer Admission

Transfer course recommendations without associate degree

Courses in economics, accounting, liberal arts, science, and mathematics

Appropriate associate degree programs for transfer

AS degree in accounting or business administration

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Management Information Systems (MIS), BS

www.rit.edu/study/management-information-systems-mis-bs
Matthew Cornwell,
585-475-6916, mcornwell@saunders.rit.edu

Program overview

Technology enhances an organization's operational efficiency. Through analysis of existing business processes, you will be able to improve and design new information systems that can help add value to an existing product and help managers make crucial decisions. The management information systems degree focuses on data analytics, teamwork, leadership skills, customer service, and underlying business theories. An MIS degree gives you the ability to develop innovative systems to solve company problems and improve business intelligence.

What is Management Information Systems (MIS)?

People, processes, and information systems are how organizations do business. Management information systems (MIS) is an interdisciplinary major focused leveraging technology, people, and processes to help improve, transform, and support business operations. It is a discipline that emphasizes the management of information and communications technology elements within business organizations. As an MIS student, you can expect to gain an understanding of computer databases, networks, and computer security, but you'll also learn how to help people better use technology. You will become are the essential link between technology and the people who don't understand it as well as you do.

RIT's Management Information Systems Major

The management information systems major prepares you for careers involving leading-edge enterprise technologies and the analysis, design, and management of computer-based information systems. The curriculum provides you with the opportunity to analyze existing business processes and learn to utilize digital technologies to improve and/or design new models. As a result, you are able to apply the concepts of enterprise resource planning and work with sophisticated enterprise systems to help companies achieve their goals. You will also design systems that are usable, practical, and cost-effective.

Careers in Management Information Systems

The MIS program prepares you for careers involving the design, development, configuration, and management of IT-based information systems for business organizations. In addition to your technology focus, you will also develop the critical business acumen and soft skills needed for successful communication, leadership, business analysis, and project management.

MIS graduates frequently pursue careers in such areas as systems analysis, business analysis, data administration, information security, web design and development, management and IT consulting, and project management. Career opportunities in MIS are excellent. According to forecasts for computer and information systems managers from the U.S. Bureau of Labor Statistics, employment for MIS-oriented positions will grow by approximately 11% between 2020 and 2030.

Because of the broad relevance of IT management skills in contemporary business, there is high demand for MIS graduates in nearly every sector and industry, with the following sectors having a particularly high demand for MIS skills: information technology, banking and financial services, health care, government services, and management consulting.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in management information systems as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

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Students in the MIS degree are required to complete at least one block of cooperative education.

Curriculum

Management Information Systems, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ACCT-110	Financial Accounting	3
ACCT-210	Management Accounting	3
ECON-101	Principles of Microeconomics (General Education – Global Perspective)	3
ECON-201	Principles of Macroeconomics (General Education)	3
INTB-225	Global Business Environment (General Education)	3
MATH-161	Applied Calculus (General Education)	4
MGIS-130	Information Systems & Technology	3
MGMT-101	Business 1: Introduction to Business Communication, Planning & Analysis	3
MGMT-102	Business 2: Business Planning and Professional Development	1
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
Second Year		
BANA-255	Data Literacy, Analytics, and Decision Making (General Education)	3
COMM-253	Communication (General Education)	3
FINC-220	Financial Management	3
MGIS-320	Database Management Systems	3
MGMT-215	Organizational Behavior	3
MKTG-230	Principles of Marketing	3
SCBI-035	Careers in Business	0
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
	Open Elective	3
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
Third Year		
DECS-310	Operations Management	3
MGIS-330	Systems Analysis and Design	3
MGIS-350	Developing Business Applications	3
MGIS-499	Management Information Systems Co-op (summer)	0
MGMT-340	Business Ethics and Corporate Social Responsibility (General Education – Ethical Perspective)	3
	General Education – Immersion 1	3
	General Education – Natural Science Inquiry Perspective †	3
	General Education – Scientific Principles Perspective	3
	MGIS Electives	9
Fourth Year		
MGIS-550	MIS Capstone (WI-PR)	3
MGMT-560	Strategic Management	3
	Open Electives	9
	General Education – Immersion 2,3	6
	General Education – Electives	9
Total Semester Credit Hours		**123**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Management Information Systems Electives

MGIS-355	Business Intelligence
MGIS-360	Building a Web Business
MGIS-425	Database Systems Development
MGIS-429	Cyber: Risk and Resilience
MGIS-445	Web Systems Development
MGIS-450	Enterprise Systems
MGIS-489	Seminar in MIS
MGIS-589	Hacking for Defense (H4D)
MGMT-360	Digital Entrepreneurship

Accreditation

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Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science

Transfer Admission

Transfer course recommendations without associate degree

Courses in economics, accounting, liberal arts, science, and mathematics

Appropriate associate degree programs for transfer

AS degree in computer information systems, accounting, or business administration

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Marketing, BS

www.rit.edu/study/marketing-bs

Matthew Cornwell,
585-475-6916, mcornwell@saunders.rit.edu

Program overview

Marketing is a critical element in the success of modern business operations. The overall process of entering markets, creating value for customers, and developing profits is the fundamental challenge for the contemporary marketing manager. RIT's marketing degree focuses on the complete business-consumer relationship, from internet marketing, social media, professional selling, international marketing, and consumer behavior. You'll gain competencies in the technical skills of search engine optimization and data analytics as you gain a complete understanding of the dynamic field of marketing and its impact on an organization's success.

What is Marketing?

Marketing is strategic communication between an organization and its customers. And, it can have multiple goals. Marketing can raise awareness of a product or service, help acquire new customers, generate sales leads, build brand reputation, boost brand engagement, establish an organization as a through-leader, reaffirm value for consumers, grow a social media presence, and more.

To be truly effective at marketing, a marketing professional must:

- Understand their audience: Through in-depth consumer research, marketers can gain deep and profound insight into who is buying their products and services, and why.
- Identify the needs/goals of customers: Understanding what consumers need and why can help marketers discern how these opportunities can lead to new or revised product lines and services.
- Build trust and communicate information: Sharing product benefits and value enables consumers to make informed decisions on products and services.
- Boost brand awareness: Engagement in your brand tells you that your audience is listening, watching, and interested in what you're doing.

Marketing Courses

In RIT's marketing degree, you will gain a solid understanding of the business activities that fall under the marketing umbrella. These include learning how to identify and select target markets; the development, placement, and promotion of goods and services; the management of relationships among organizations and their customers, and analyzing the successfulness of marketing campaigns and activities.

You'll study business-consumer relationships from multiple angles as you learn about the power and influence of internet marketing, social media, search engine optimization (SEO), search engine marketing (SEM), and data analytics on consumer awareness and behavior. Course work also covers professional selling and international marketing.
You'll also gain practical experience creating strategic marketing plans. Through a range of projects, you'll learn to work independently and in teams to solve marketing challenges. Through classroom experiences and your work on real and simulated business challenges, you'll develop leadership and communication skills. You'll gain proficiency in analyzing and understanding buyers, developing and delivering professional sales presentations, and designing and implementing marketing research projects. You'll graduate ready to create and critically evaluate strategic marketing plans.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in marketing as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.

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Experiential Learning

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Co-ops take your knowledge and turn it into know-how. Business co-ops provide hands-on experience that enables you to apply your knowledge of business, management, finance, accounting, and related fields in professional settings. You'll make valuable connections between course work and real-world applications as you build a network of professional contacts.

Students in the marketing degree are required to complete at least one block of cooperative education.

Careers in Marketing

Careers in marketing are vast, dynamic, and multifaceted. And, with marketing needs in nearly every single industry, you can work in an area in which you have a particular passion, such as higher education, consumer goods, retail, entertainment, law, health care, and so much more. You'll find that there are opportunities in all industries to create value for consumers, to better understand your key audiences, and to create opportunities to build or strengthen brand awareness.

Marketing encompasses a range of career opportunities that span from the creative (content creators, copywriters, storytellers) to the analytical (marketing research, SEO, SEM) to the logistics (sales, media buying/media placement), to the strategy (product/brand managers, chief marketing officers).

Curriculum

Marketing, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ACCT-110	Financial Accounting	3
ACCT-210	Management Accounting	3
BANA-255	Data Literacy, Analytics, and Decision Making	3
ECON-101	Principles of Microeconomics (General Education – Global Perspective)	3
ECON-201	Principles of Macroeconomics (General Education)	3
MATH-161	Applied Calculus (General Education)	4
MGIS-130	Information Systems & Technology	3
MGMT-101	Business 1: Introduction to Business Communication, Planning, and Analysis	3
MGMT-102	Business 2: Business Planning and Professional Development	1
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
Second Year		
COMM-253	Communication (General Education)	3
FINC-220	Financial Management	3
INTB-225	Global Business Environment (General Education)	3
MGMT-215	Organizational Behavior	3
MKTG-230	Principles of Marketing	3
MKTG-320	Digital Marketing (WI-PR)	3
SCBI-035	Careers in Business	0
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
	Open Elective	3
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
Third Year		
DECS-310	Operations Management	3
MGMT-340	Business Ethics and Corporate Social Responsibility (General Education – Ethical Perspective)	3
MKTG-350	Consumer Behavior	3
MKTG-365	Marketing Analytics	3
MKTG - 499	Marketing Co-op (summer)	0
	General Education – Immersion 1, 2	6
	General Education – Natural Science Inquiry Perspective†	3
	General Education – Scientific Principles Perspective	3
	Marketing Electives	6
Fourth Year		
MGMT-560	Strategic Management	3
MKTG-550	Marketing Strategy (WI-PR)	3
	Open Electives	9
	General Education – Immersion 3	3
	General Education – Electives	9
	Marketing Elective	3
Total Semester Credit Hours		**123**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Marketing Electives

COURSE	
ISTE-105	Web Foundations
ISTE-305	Rapid Online Presence
MAAT-101	Cross Media Foundations
MAAT-106	Typography and Page Design
MAAT-107	Imaging
MGIS-360	Building a Web Business
MGMT-360	Digital Entrepreneurship
MKTG-310	Marketing Research
MKTG-330	Global Marketing
MKTG-360	Professional Selling
MKTG-370	Advertising and Promotion Management
MKTG-410	Search Engine Marketing and Analytics
MKTG-430	Social Media Marketing
MKTG-489	Seminar in Marketing

Accreditation

Saunders College of Business undergraduate and graduate programs are fully accredited by the Association to Advance Collegiate Schools of Business (AACSB) International, the premier accrediting organization for business schools. Less than 5 percent of the institutions granting business degrees have received this accreditation.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science

Transfer Admission

Transfer course recommendations without associate degree

Courses in economics, accounting, liberal arts, science, and mathematics

Appropriate associate degree programs for transfer

AS degree in accounting or business administration

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Supply Chain Management, BS

www.rit.edu/study/supply-chain-management-bs
Matthew Cornwell,
585-475-6916, mcornwell@saunders.rit.edu

Program overview

Many companies and organizations are involved in making supplies and products readily available so producers, manufacturers, and ultimately, consumers, can have them when and where they want them, and at a competitive price. Coordinating and managing all of the organizations and suppliers involved in the activities that move products to the right places and the right times is the goal of supply chain management. More than ever, technology is driving supply chain processes and strategies to help give companies a competitive edge.

What is Supply Chain Management?

It's not often a supply chain gets interrupted to the point where consumers cannot find the products they need. But when it does, people notice.

When Covid-19 created panicked buying at grocery stores around the country, suddenly consumers couldn't find toilet paper, paper towels, canned soup, tuna, rice, or cleaning products. And, as a result of those empty grocery store shelves, we all came to understand the importance of supply chain management in our every day lives.

What is a supply chain? It's a complex and interconnected system that begins with business strategists forecasting or predicting consumer demand for goods and ends with products available for consumers to purchase. In between is a complex web of purchasers and negotiators managing raw materials and suppliers, information systems that manage inventory and data, transportation systems that move and distribute materials and goods between warehouses and retail operations, and retail stores stacking shelves and selling products to you, the consumer.

Supply chain optimization occurs when you manage this intricate, expansive network of suppliers, producers, vendors, warehouses, transportation networks, logistical partners, and retailers. This is the focus of the supply chain manager, the supply chain analyst, and other professionals in the field that deal with the wide range of responsibilities that keep the global supply chain humming along. Gaining the expertise you need to build a career in this dynamic field comes from a degree in supply chain management.

RIT's Supply Chain Management Degree

RIT's supply chain management degree provides students with the knowledge they need to effectively develop, implement and manage efficient global supplier systems in order to maximize customer value. Supply chain management coordinates a wide range of supply chain processes required of both businesses and business partners, including suppliers, to deliver products and services. Students gain a solid understanding of the areas needed to support supply chain management, such as supply chain strategies, logistics, information systems, lean/quality management, customer service, purchasing, negotiations, contracts, forecasting, inventory management, and project management. In addition to business operations, supply chain management plays a critical role in medical missions, disaster relief operations, and other types of service industries.

Supply Chain Management Courses

The degree in supply chain management includes foundational business courses in financial and management accounting, economics, marketing, business planning, and operations management. Supply chain management courses – in topics that include database management systems, enterprise systems, managing supplier relations, logistics in supply chain management, and Lean Six Sigma fundamentals – prepare you for a range of dynamic careers in the field. You're free to select elective courses that round out your degree and add in-depth study within supply chain management. Elective courses include cross-cultural management, exporting and global sourcing, business intelligence, and negotiations and decision making, to name a few.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in supply chain management as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops take your knowledge and turn it into know-how. Business co-ops provide hands-on experience that enables you to apply your knowledge of business, management, finance, accounting, and related fields in professional settings. You'll make valuable connections between course work and real-world applications as you build a network of professional contacts.

Students in the supply chain management degree are required to complete at least one block of cooperative education.

Curriculum

Supply Chain Management, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ACCT-110	Financial Accounting	3
ACCT-210	Management Accounting	3
BANA-255	Data Literacy, Analytics, and Decision Making	3
ECON-101	Principles of Microeconomics (General Education – Global Perspective)	3
ECON-201	Principles of Macroeconomics (General Education)	3
MATH-161	Applied Calculus (General Education)	4
MGIS-130	Information Systems & Technology	3
MGMT-101	Business 1: Introduction to Business Communication, Planning, and Analysis	3
MGMT-102	Business 2: Business Planning and Professional Development	1
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
Second Year		
COMM-253	Communication (General Education)	3
DECS-310	Operations Management	3
DECS-435	Supply Chain Management Fundamentals	3
INTB-225	Global Business Environment (General Education)	3
MKTG-230	Principles of Marketing	3
MGMT-215	Organizational Behavior	3
SCBI-035	Careers in Business	0
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	Open Elective	3
Third Year		
DECS-499	Decision Science Co-op (Summer)	0
FINC-220	Financial Management	3
INTB-315	Exporting and Global Sourcing	3
MGMT-340	Business Ethics and Corporate Social Responsibility (General Education – Ethical Perspective)	3
	General Education – Immersion 1, 2	6
	General Education – Natural Science Inquiry Perspective†	3
	General Education – Scientific Principles Perspective	3
	General Education – Elective	3
	Open Elective	3
	Supply Chain Management Elective	3
Fourth Year		
DECS-445	Managing Supplier Relations	3
DECS-550	Supply Chain Management Capstone (WI-PR)	3
ISEE-582	Lean Six Sigma Fundamentals	3
MGMT-560	Strategic Management	3
	General Education – Immersion 3	3
	Open Elective	6
	General Education – Electives	6
	Supply Chain Management Elective	3
Total Semester Credit Hours		**123**

Please see General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Supply Chain Management Electives

COURSE	
DECS-350	Project Management
INTB-300	Cross-Cultural Management
INTB-550	Competing Globally
ISEE-626	Contemporary Production Systems
MGIS-355	Business Intelligence
MGIS-450	Enterprise Systems
MGMT-450	Negotiations and Decision-Making

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- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science

Transfer Admission

Transfer course recommendations without associate degree

Courses in economics, accounting, liberal arts, science, and mathematics

Appropriate associate degree programs for transfer

AS degree in accounting or business administration

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Faculty

Dean's Office

Jacqueline R. Mozrall, BS, Rochester Institute of Technology; MS, North Carolina State University; Ph.D., University of New York at Buffalo—Dean; Professor

Qiang (John) Tu, BS, MS, Xi'an Jiaotong University (China); Ph.D., University of Toledo—Senior Associate Dean; Professor

Shalini Khazanchi, BS, South Gujarat University (India); MBA, University of Pune (India); Ph.D., University of Cincinnati—Associate Dean for Research and Graduate Programs; Professor

Lisa Boice, BA, MBA, Long Island University; JD, Hofstra University School of Law—Assistant Dean of Student Services

Shawn Sturgeon, Ph.D., University of Cincinnati—Director of Accreditation and Assessment; Senior Lecturer

Finance and Accounting

Archana Jain, B.Comm., M.Comm., University of Rajasthan (India); MBA, Ph.D., University of Memphis—Department Chair; Associate Professor

Kyunghoon Ban, BA, MA, Seoul National University (South Korea); Ph.D., Iowa State University—Assistant Professor

John Curran, BA, University of Rochester; MS, Syracuse University—Lecturer

William H. Dresnack, BS, Long Island University; MS, State University of New York at Binghamton; JD, University of Buffalo—MBA Program Director; Associate Professor

Philip C. Gelsomino II, BS, MS, Rochester Institute of Technology; CPA, New York—Senior Lecturer

Chun-Keung (Stan) Hoi, BA, MS, North Texas State University; Ph.D., Arizona State University—Professor

Mehdi Khorram, BS, Shiraz University (Iran); MS, University of Tehran (Iran); Ph.D., Louisiana State University—Assistant Professor

Zhijian (James) Huang, B.Eng., Shanghai Jiaotong University (China); MS, Michigan State University; M.Eng., Cornell University; Ph.D., Pennsylvania State University—Associate Professor

Suzanne McCaffrey, BS, University of Maryland, College Park; MS, University of Mississippi—Lecturer

Ashok J. Robin, B.Comm, University of Madras (India); MBA, Ph.D., State University of New York at Buffalo—Professor

Qian Song, B.Sc ., M.Sc ., Qingdao University (China); Ph.D., Washington State University—Associate Professor

Ke-an Wu, BS, Jiangxi University of Finance and Economics (China); MS, Catholic University Leuven (Belgium); Ph.D., University of Oregon—Associate Professor

Rong Yang, BS, MS, Tianjin University of Finance and Economics (China); MBA, Ph.D., Rutgers University—Professor

Hao Zhang, BA, MA, Xiamen University (China); Ph.D., State University of New York at Buffalo—Program Director; Professor

Management

Kristin Bain, BA, University of Northern Colorado; MA, University of Denver; Ph.D., University of Utah, Salt Lake City—Assistant Professor

Richard DeMartino, BA, Roanoke College; MPA, Ph.D., University of Virginia—Professor

John E. Ettlie, BS, MS, Ph.D., Northwestern University—Professor

Kenan Guler, MS, New York University; Ph.D., Rutgers University—Assistant Professor

Malarvizhi Hirudayaraj, BA, Fatima College (Trinidad and Tobago); B.Ed., Madurai Kamaraj University (India); MA, Stella Maris College (India); M.Phil., University of Madras (India); Ph.D., Southern Illinois University—Director, AdvanceRIT; Professor

Clyde E. Hull, BA, Yale University; MBA, Ph.D., Indiana University—Professor

Dennis Jamrose, BS, Indiana University; MBA, MS, Rochester Institute of Technology; Ph.D., State University of New York at Buffalo—Visiting Lecturer

Shalini Khazanchi, BS, South Gujarat University (India); MBA, University of Pune (India); Ph.D., University of Cincinnati—Associate Dean for Research and Graduate Programs, Professor

Richard M. Lagiewski, BS, MS, Rochester Institute of Technology; Ph.D., Edinburgh Napier University (Scotland)—Principal Lecturer

H. Andrew Lawrence, BS, EMBA, Rochester Institute of Technology—Lecturer

Jennifer Matic, BA, Grand Valley State University; MS, Rochester Institute of Technology; Ph.D., University of Bath (United Kingdom)—Principal Lecturer

Molly McGowan, BA, State University College at Geneseo; MPA, State University College at Brockport—Senior Lecturer; Director, The Leadership Academy at Saunders

dt ogilvie, BA, Oberlin College; MBA, Southern Methodist University; Ph.D., University of Texas at Austin—Professor

Joy Olabisi, BS, Georgia Institute of Technology; MS, Ph.D., University of Michigan—Program Director; Associate Professor

Michael E. Palanski, BS, Grove City College; MA, Covenant Theological Studies; Ph.D., Binghamton University—Professor

Sandra L. Rothenberg, BS, Syracuse University; MS, Ph.D., Massachusetts Institute of Technology—Department Chair, Public Policy; Professor

Ettore Spadafora, Ph.D., University of South Carolina—Assistant Professor

Torrence E. Sparkman, BS, University of Illinois at Chicago; M.Div., Trinity Evangelical Divinity School; Ph.D., University of Illinois at Urbana-Champaign—Associate Professor

Shawn Sturgeon, Ph.D., University of Cincinnati—Director of Accreditation and Assessment; Senior Lecturer

Laharish Guntuka, B.Tech, Maulana Azad National Institute of Technology (India); MS, Iowa State University; Ph.D., University of Maryland at College Park—Assistant Professor

Zhi Tang, BA, Shandong University (China); MA, Fudan University (China); Ph.D., University of Alabama—Professor

MIS, Marketing, and Analytics

Sean William Hansen, BA, Harvard University; MBA, Ph.D., Case Western Reserve University—Department Chair; Professor

Duygu (Kayiran) Adkevelioglu, BS, MS, Bilkent University (Turkey); Ph.D., University of California, Irvine—Assistant Professor

Quang (Neo) Bui, BS, MS, Brigham Young University; Ph.D., Bentley University—Associate Professor

Michael Caceci, BA, City University of New York; MBA, Pace University —Lecturer

Sorim Chung, BJ, MA, University of Missouri, Columbia; MA, Ph.D., University of California, Riverside—Associate Professor

Deborah Colton-Hebert, BA, State University of New York at Buffalo; MBA, Rochester Institute of Technology; Ph.D., University of South Carolina—Associate Professor

Neil Hair, BS, Cardiff University (United Kingdom); DIPM, Chartered Institute of Marketing; MS, Sheffield Hallam University (United Kingdom); Ph.D., Cranfield University (United Kingdom)—Executive Director, Center for Teaching and Learning; Professor

Richard M. Lagiewski, BS, MS, Rochester Institute of Technology; Ph.D., Edinburgh Napier University (Scotland)—Principal Lecturer

Saiwu Lin, MS, University of Arizona—Senior Lecturer

Manlu Liu, BS, Jiangsu University (China); MS, Zhejiang University; MBA, The Hong Kong University of Science & Technology (Hong Kong); Ph.D., University of Arizona—Program Director; Professor

Richard Mislan, BS, Rochester Institute of Technology; MS, Ferris State University; Ph.D., Nova Southeastern University—Senior Lecturer

Emi Moriuchi, BA, Manchester Metropolitan University (United Kingdom); MA, Hawaii Pacific University; Ph.D., University of Manchester (United Kingdom)—Associate Professor

Gijs Overgoor, BS, MS, Ph.D., University of Amsterdam (the Netherlands)—Assistant Professor

Ali Tosyali, BS, Turkish Military Academy (Turkey); MS, Ph.D., Rutgers University—Assistant Professor

Rajendran (Raj) Sriramachandra Murthy, BE, University of Madras (India); MBA, Ph.D., Southern Illinois University—Associate Professor

Victor J. Perotti, BS, MA, MS, Ph.D., The Ohio State University—Professor

Bryan A. Reinicke, BA, College of Wooster; MBA, Kent State University; Ph.D., Indiana University—Associate Professor

Jing Tang, BS, University of Science and Technology of China (China); MS, University of Chinese Academy of Sciences (China); MPhil., EMLYON Business School (France); Ph.D., Case Western Reserve University—Assistant Professor

Qiang (John) Tu, BS, MS, Xi'an Jiaotong University (China); Ph.D., University of Toledo—Senior Associate Dean; Professor

Keith Weber, MS, California State University, Fullerton—Senior Lecturer

International Hospitality and Service Innovation

Edwin Torres, BS, BA, University of Puerto Rico (Puerto Rico; MS, Ph.D., Purdue University—Department Chair, Associate Professor

Soon Hyeok (Steve) Choi, MA, MS, Ph.D. Cornell University—Assistant Professor

Debanjana Dey, BS, University of Calcutta (India); MS, Utkal University (India); MS, Florida State University; Ph.D., University of Central Florida—Assistant Professor

Edward Ganster; BS, Rochester Institute of Technology—Lecturer

Lorraine E. Hems, BS, Nazareth College of Rochester; MS, Rochester Institute of Technology; CS, CWE—Senior Lecturer

Jerrie (Yu-chin) Hsieh, BS, National Taiwan Normal University (Taiwan); MS, Ph.D., Purdue University—Program Director; Professor

Muhammet Kesgin, BSc, MSc, Akdeniz University (Turkey); Ph.D., Coventry University (United Kingdom)—Associate Professor

Distinguished Professorships

J. Warren McClure Research Professorship in Marketing

Established: 1977

Donor: Mr. and Mrs. J. Warren McClure

Purpose: To perpetuate Mr. McClure's professional interest in the field of marketing

Held by: Emi Moriuchi, Ph.D.

Madelon and Richard Rosett Professorship for Research

Established: 2000

Donor: Madelon and Richard Rosett

Purpose: To support a professorship of a nationally prominent scholar in any field of business

Held by: Hao Zhang, Ph.D.

Benjamin Forman Professorship for Collaborative Research

Established: 2008

Donor: Maurice Foreman in honor of his father, Benjamin Forman

Purpose: To support a professorship of a nationally prominent scholar in Research, Teaching, or Collaboration

Held by: Vic Perotti, Ph.D.

Benjamin Forman Professorship for Research

Established: 2008

Donor: Maurice Foreman in honor of his father, Benjamin Forman

Purpose: To support a professorship of a nationally prominent scholar in Research

Held by: Zhi Tang, Ph.D.; Rong Yang, Ph.D.

Golisano College of Computing and Information Sciences

Matt Huenerfauth, Dean
www.rit.edu/computing

Programs of Study

Combined Accelerated Bachelor's/Master's degree available.

The Golisano College of Computing and Information Sciences is one of the most comprehensive computing colleges in the United States. With its focus on interdepartmental and intercollege cooperation, the college directs its energy and effort toward discovering new, innovative methods and research opportunities in solving complex, present-day, and future computing challenges.

The college's programs address the growing need for experts in the fields of computational science, human-computer interaction and accessibility, gaming, simulation, computing security, edutainment, management of complex information technology infrastructures, and software engineering. These programs offer the most current thinking in computing and information sciences and technology, and are supported by extensive laboratory facilities and outstanding faculty.

Please visit the school's website–**www.rit.edu/computing**–for in depth information on academics, admissions requiremens, faculty, facilities, financial aid and scholarships, research initiatives, and more.

Accreditation

The bachelor of science in computer science program is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org. The bachelor of science in software engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Computer Science, BS

www.rit.edu/study/computer-science-bs
Zachary Butler, Professor
585-475-6155, zxbvcs@rit.edu

Program overview

Computer science covers a wide spectrum of areas within the field of computing, ranging from theoretical to practical. As a computer scientist, you can specialize in areas such as intelligent systems (i.e., artificial intelligence), computer graphics, computer theory, data management, distributed and parallel computing, systems software, or computer security.

While programming is necessary, computer scientists must also be adaptable and adept at problem-solving and analytical reasoning, able to understand design principles, mathematical theory, and fluent technical applications of computer science. RIT prepares you to be well versed in all these aspects including programming because most employers look for students who are good computer scientists, but also understand the tools and techniques of mathematics, science, and industry, and are able to communicate effectively.

RIT's Computer Science Degree

You will take a core of computer science courses that provide a solid foundation for advanced work. Building on this base, explore a variety of specializations in your third, fourth, and fifth years. In addition, you will develop a broad appreciation for computer applications and the effect of computers on society via program electives, general education courses, and various free electives, which can be used to complete a minor.

The computer science bachelor's degree provides you with both a broad and deep foundation in theory and modern software and hardware concepts as well as introduces you to numerous programming languages and paradigms. RIT offers you the opportunity to engage in significant programming and software development work, or in both traditional and applied research.

In addition to required computer science BS courses, you may take computer science electives in areas such as architecture and operating systems; computer graphics and visualization; data management; distributed systems; artificial intelligence; languages and tools; security; and theory.

Students who graduate from our computer science degree are able to:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions (problem solving).
2. Design, implement, and evaluate a computing based solution to meet a given set of computing requirements in the context of the program's discipline (software development/engineering).
3. Communicate effectively in a variety of professional contexts (communication).
4. Recognize professional responsibilities and make informed judgments in computing practices based on legal and ethical principles (ethics/legal).
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline (teamwork).
6. Apply computer science theory and software development fundamentals to produce computing-based solutions (theory/application).
7. Demonstrate advanced knowledge of a selected area within the computer science discipline (advanced knowledge).

Careers in Computer Science

Employers not only look for students who have strong technical skills, but who also understand mathematics, science, and the importance of effective communication. The computer science degree provides students with a solid foundation in mathematics, science, liberal arts and an opportunity to take outside electives, complementing the program's strong technical core.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

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Cooperative Education

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Co-ops and internships take your knowledge and turn it into know-how. Your computing co-ops will provide hands-on experience that enables you to apply your computing knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the computer science degree are required to complete three blocks of cooperative education experience.

Curriculum

Computer Science, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-141	Computer Science I (General Education)	4
CSCI-142	Computer Science II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – First-Year Writing (WI)	3
Second Year		
CSCI-099	Undergraduate Cooperative Education Seminar	0
CSCI-243	The Mechanics of Programming	3
CSCI-488	Undergraduate Summer Co-op	0
Choose one of the following:		3
CSCI-261	Analysis of Algorithms	
CSCI-264	Honors Analysis of Algorithms	
Choose one of the following:		3
CSCI-262	Introduction to Computer Science Theory	
CSCI-263	Honors Introduction to Computer Science Theory	
MATH-241	Linear Algebra (General Education)	3
MATH-251	Probability and Statistics I (General Education)	3
SWEN-261	Introduction to Software Engineering	3
	General Education – Natural Science Inquiry Perspective‡	4
	General Education – Scientific Principles Perspective	3
	General Education – Elective‡	4
	General Education – Elective	3
Third Year		
CSCI-250	Concepts of Computer Systems	3
CSCI-320	Principles of Data Management	3
CSCI-331	Introduction to Artificial Intelligence	3
CSCI-499	Computer Science Undergraduate Co-op (spring)	0
	Open Elective	3
	General Education – Immersion 1 (WI)	3
Fourth Year		
CSCI-251	Concepts of Parallel and Distributed Systems	3
CSCI-344	Programming Language Concepts	3
Choose one of the following:		3
CSCI-471	Professional Communications (WI-PR)	
CSCI-472	Historical & Current Perspectives in Computer Science (WI-PR)	
	Open Electives	9
	CS Electives	6
	CS Elective§	3
	General Education – Immersion 2	3
Fifth Year		
CSCI-499	Computer Science Undergraduate Co-op (fall)	0
	CS Elective§	3
	General Education – Immersion 3	3
	General Education – Elective	3
	Open Electives	6
Total Semester Credit Hours		**126**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students must complete one of the following lab science sequences: (a) University Physics I, II (PHYS-211, 212); (b) General & Analytical Chemistry I, II and Labs (CHMG-141, 142, 145, 146); or (c) General Biology I, II, and Labs (BIOL-101, 102, 103, 104).
§ Two computer science elective courses must come from the same CS cluster.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Computer Science, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-141	Computer Science I (General Education)	4
CSCI-142	Computer Science II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
CSCI-099	Undergraduate Cooperative Education Seminar	0
CSCI-243	The Mechanics of Programming	3
CSCI-488	CS Undergraduate Summer Co-op (summer)	0
Choose one of the following:		3
CSCI-261	Analysis of Algorithms	
CSCI-264	Honors Analysis of Algorithms	
Choose one of the following:		3
CSCI-262	Introduction to Computer Science Theory	
CSCI-263	Honors Introduction to Computer Science Theory	
MATH-241	Linear Algebra (General Education)	3
MATH-251	Probability and Statistics I (General Education)	3
SWEN-261	Introduction to Software Engineering	3
	General Education – Natural Science Inquiry Perspective‡	4
	General Education – Scientific Principles Perspective‡	3
	General Education – Elective‡	4
	General Education – Elective	3
Third Year		
CSCI-250	Concepts of Computer Systems	3
CSCI-320	Principles of Data Management	3
CSCI-331	Introduction to Artificial Intelligence	3
CSCI-499	Computer Science Undergraduate Co-op (spring)	0
	General Education – Science Elective‡	3
	General Education – Immersion 1 (WI)	3
Fourth Year		
CSCI-251	Concepts of Parallel and Distributed Systems	3
CSCI-344	Programming Language Concepts	3
Choose one of the following:		3
CSCI-471	Professional Communications (WI-PR)	
CSCI-472	Historical and Current Perspectives in Computer Science	
	Open Electives	6
	CS Electives§	9
	General Education – Science Elective‡	3
	General Education – Immersion 2	3
Fifth Year		
CSCI-499	Computer Science Undergraduate Co-op (fall)	0
	CS Elective§	3
	General Education – Immersion 3	3
	General Education – Elective	3
	Open Electives	6
Sixth Year		
CSCI-610	Fundamentals of Computer Graphics	3
CSCI-631	Foundations of Computer Vision	3
CSCI-664	Computational Complexity	3
CSCI-799	Computer Science Graduate Independent Study	6
CSCI-790	Computer Science MS Thesis	6
Total Semester Credit Hours		**147††**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students must complete one of the following lab science sequences: (a) University Physics I, II (PHYS-211, 212); (b) General & Analytical Chemistry I, II and Labs (CHMG-141, 142, 145, 146); or (c) General Biology I, II, and Labs (BIOL-101, 102, 103, 104). Students are open to choose from approved science electives that either extend or complement their lab science selection.
§ Two computer science elective courses must come from the same CS cluster.
** Students who complete the MS Project take one more graduate elective than those who complete the MS Thesis.
†† The BS degree requires 126 semester hours; the MS degree requires 30 semester hours; students use 9 semester hours of computer science graduate electives toward both degrees.

Computer Science, BS degree/Cybersecurity, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-141	Computer Science I (General Education)	4
CSCI-142	Computer Science II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
CSCI-099	Undergraduate Cooperative Education Seminar	0
CSCI-243	The Mechanics of Programming	3
CSCI-488	Computer Science Undergraduate Co-op (summer)	0
Choose one of the following:		3
CSCI-261	Analysis of Algorithms	
CSCI-264	Honors Analysis of Algorithms	
Choose one of the following:		3
CSCI-262	Introduction to Computer Science Theory	
CSCI-263	Honors Introduction to Computer Science Theory	
MATH-241	Linear Algebra (General Education)	3
MATH-251	Probability and Statistics I (General Education)	3
SWEN-261	Introduction to Software Engineering	3
	General Education – Natural Science Inquiry Perspective‡	4
	General Education- Scientific Principles Perspective‡	3
	General Education – Elective: Lab Science II‡	4
	General Education – Elective	3
Third Year		
CSCI-250	Concepts of Computer Systems	3
CSCI-320	Principles of Data Management	3
CSCI-331	Introduction to Artificial Intelligence	3
CSCI-499	Computer Science Undergraduate Co-op (spring)	0
	General Education – Science Elective	3
	General Education – Immersion 1 (WI)	3
Fourth Year		
CSCI-251	Concepts of Parallel and Distributed Systems	3
CSCI-344	Programming Language Concepts	3
Choose one of the following:		3
CSCI-471	Professional Communications (WI-PR)	
CSCI-472	Historical and Current Perspectives in Computer Science	
	Open Electives	6
	CS Electives	9
	General Education – Science Elective‡	3
	General Education – Immersion 2	3
Fifth Year		
CSCI-499	Computer Science Undergraduate Co-op (fall)	0
	CS Elective	3
	General Education – Immersion 3	3
	General Education – Elective	3
	Open Electives/ CSEC Graduate Elective	6
Sixth Year		
CSEC-604	Cryptography and Authentication	3
CSEC-742	Computer System Security	3
CSEC-790	MS Thesis	6
	Computing Security Graduate Elective	3
	CSEC Research Electives	6
Total Semester Credit Hours		**147**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Computer Science, BS degree/Software Engineering, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-141	Computer Science I	4
CSCI-142	Computer Science II	4
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education – Elective)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Second Year		
CSCI-099	Undergraduate Co-operative Education Seminar	0
CSCI-243	The Mechanics of Programming	3
CSCI-488	CS Undergraduate Summer Co-op (summer)	0
Choose one of the following:		3
CSCI-262	Introduction to Computer Science Theory	
CSCI-263	Honors Introduction to Computer Science Theory	
MATH-241	Linear Algebra (General Education – Elective)	3
MATH-251	Probability and Statistics I (General Education – Elective)	3
Choose one of the following:		3
CSCI-261	Analysis of Algorithms	
CSCI-264	Honors Analysis of Algorithms	
SWEN-261	Introduction to Software Engineering	3
	General Education – Elective: Lab Science II†	4
	General Education – Elective	3
	General Education – Natural Science Perspective: Lab Science I‡	4
	General Education – Scientific Principles Perspective†	3
Third Year		
CSCI-250	Concepts of Computer Systems	3
CSCI-320	Principles of Data Management	3
CSCI-331	Introduction to Artificial Intelligence	3
CSCI-499	Computer Science Undergraduate Co-op (spring)	0
	General Education – Science Elective‡	3
	General Education – Immersion 1 (WI)	3
Fourth Year		
CSCI-251	Concepts of Parallel and Distributed Systems	3
CSCI-344	Programming Language Concepts	3
CSCI-471	Professional Communications (WI-PR)	3
SWEN-732	Collaborative Software Development	3
SWEN-746	Model-Driven Development	3
	General Education – Immersion 2	3
	Computer Science Electives	9
	General Education – Science Elective‡	3
Fifth Year		
CSCI-499	Computer Science Undergraduate Co-op (fall)	0
	Computer Science Elective	3
	General Education – Immersion 3	3
	General Education – Elective	3
	Open Electives	6
Sixth Year		
SWEN-640	Research Methods	3
SWEN-755	Software Architecture	3
SWEN-777	Software Quality Assurance	3
SWEN-799	Independent Study	3
	Graduate Elective	3
Seventh Year		
SWEN-790	Thesis	6
	Graduate Elective	3
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students must complete one of the following lab science sequences: University Physics I (PHYS-211) and University Physics II (PHYS-212); General & Analytical Chemistry I (CHMG-141), General & Analytical Chemistry I Lab (CHMG-145), General & Analytical Chemistry II (CHMG-142), and General & Analytical Chemistry II Lab (CHMG-146); or General Biology I (BIOL-101), General Biology I Lab (BIOL-103), General Biology II (BIOL-102), and General Biology II Lab (BIOL-104).
‡ Students satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Accreditation

The BS degree in computer science is accredited by the Computing Accreditation Commission of ABET.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are preferred.
- Computing electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in computer science, calculus, liberal arts; calculus-based physics, chemistry, or biology

Appropriate associate degree programs for transfer

AS degree in computer science, engineering science, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Computing and Information Technologies, BS

www.rit.edu/study/computing-and-information-technologies-bs

Dan Bogaard, Associate Professor
585-475-5231, Dan.Bogaard@rit.edu

Program overview

RIT's Computing and Information Technology Degree

Information technology is found in every aspect of our lives—the workplace, our homes, the way we communicate, and in much of the entertainment we consume. IT professionals, therefore, are in great demand and highly valued.

RIT's computer information technology degree embodies a hands-on approach to technology. Learn to design, implement, and manage complex IT systems by approaching complex problems and creating custom solutions that help users meet their goals. You will play an integral role in any modern organization, often working behind the scenes to deploy technology where it's needed most.

Computer Information Technology Courses

A defining aspect of the computing and information technologies degree curriculum is the breadth of technologies and the focus on integration. You will learn how to solve problems and find ways to make it work. Course work prepares you to be not just technical wizards, but also communicators and facilitators, enabling you to be successful throughout your careers.

The bechelors in computer information systems builds on core courses so you can further your skills in two separate areas or establish even greater depth in a single area. Possible areas of concentration include:

- Web administration
- Database
- Networking and communications
- Web development
- Enterprise administration

Global Opportunities

The computing and information technology degree is offered at RIT's main campus and at RIT Croatia. Because the curriculum is the same, you can spend a semester abroad learning about computing and the Croatian culture without impacting your progress toward graduation.

Hands-On Experience in Computing and Information Technology

In the senior year of the computing and information technology degree, students are required to take Senior Development Projects I and II. This is a year-long course in which teams are composed of students from the RIT U.S. and RIT Croatia campuses. Whether you choose to study abroad or remain in Rochester, you will be working side-by-side with peers from across the world.

Another highly impactful hands-on experience you will participate in is two blocks of cooperative education providing you with field training and experience through streamlined computing co-ops.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your computing co-ops will provide hands-on experience that enables you to apply your computing knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the computing and information technologies degree are required to complete two blocks of cooperative education experience.

Curriculum

Computing and Information Technologies, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
COMM-142	Introduction to Technical Communication (WI-GE) (General Education)	3
CSEC-102	Information Assurance and Security	3
GCIS-123	Software Development and Problem Solving I (General Education)	4
GCIS-124	Software Development and Problem Solving II (General Education)	4
MATH-131	Discrete Mathematics (General Education – Mathematical Perspective A)	4
MATH-161	Applied Calculus (General Education – Mathematical Perspective B)	4
NSSA-102	Computer System Concepts	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Second Year		
ISTE-99	School of Information Second Year Seminar	0
ISTE-140	Web & Mobile I	3
ISTE-230	Introduction to Database and Data Modeling (General Education)	3
ISTE-240	Web & Mobile II	3
ISTE-499	Undergraduate Co-op (summer)	0
NSSA-220	Task Automation Using Interpretive Languages	3
NSSA-221	System Administration I	3
NSSA-241	Introduction to Routing and Switching	3
STAT-145	Introduction to Statistics I (General Education)	3
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective	4
	General Education – Elective	3
Third Year		
ISTE-260	Designing the User Experience	3
ISTE-430	Information Requirements Modeling	3
Choose one of the following:		0
ISTE-498	Undergraduate Creative, Innovative or Research Experience (summer)	
ISTE-499	Undergraduate Co-op (summer)	
	CIT Concentration Courses	9
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective	4
	General Education – Immersion 1	3
	Open Electives	6
Fourth Year		
ISTE-500	Senior Development Project I	3
ISTE-501	Senior Development Project II (WI-PR)	3
	CIT Concentration Courses	9
	General Education – Immersion 2, 3	6
	Open Electives	9
Total Semester Credit Hours		**126**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Concentrations

Database Applications

Choose three of the following:	
ISTE-330	Database Connectivity and Access
ISTE-432	Database Application Development
ISTE-434	Data Warehousing
ISTE-436	Database Management and Access
ISTE-438	Contemporary Databases
ISTE-470	Data Mining and Exploration

Enterprise Administration

Required Courses	
NSSA-320	Configuration Management
NSSA-322	Systems Administration II
Choose one of the following:	
NSSA-244	Virtualization
NSSA-370	Project Management
NSSA-422	Storage Architectures
NSSA-423	Scalable Computing Architectures
NSSA-425	Data Center Operations
NSSA-427	Scalable Web Services Architectures

Human Centered Computing

Choose three of the following:	
ISTE-262	Foundations of Human Centered Computing
ISTE-264	Prototyping and Usability Testing
ISTE-266	Design for Accessibility

Networking and Communications

Required Course	
NSSA-245	Network Services
Choose two of the following:	
NSSA-242	Wireless Networking
NSSA-342	Large Scale Networking
NSSA-370	Project Management
NSSA-441	Advanced Routing and Switching
NSSA-443	Network Design and Performance

Web Development

ISTE-340	Client Programming
ISTE-341	Server Programming
SWEN-383	Software Design Principles and Patterns

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are preferred.
- Computing electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in computer science, calculus, liberal arts; calculus-based physics, chemistry, or biology

Appropriate associate degree programs for transfer

AS degree in computer science, engineering science, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Computing Exploration

www.rit.edu/study/computing-exploration
Michael Yacci, Professor
585-475-5416, mayici@rit.edu

Program overview

With eight undergraduate majors in computer science, the computing exploration option is a great way for you to gain an overview of the computing field while you take the time to decide which major best meets your personal and professional aspirations.

The computing exploration option provides students with the opportunity to explore seven of the college's undergraduate computing majors—computer science, computing and information technologies, computing security, human-centered computing, new media interactive development, software engineering, and web and mobile computing. Students complete courses in computer science, computing security, and web development. They may also take additional courses in other computing majors as they decide on which major best fits their career goals and aspirations.

Plan of study

Students may stay in the exploration option for up to two semesters (one academic year). Each student has an assigned academic advisor who provides guidance on the requirements of each major, course selection, minors, and career options. All courses taken in the exploration option are accepted by the seven computing majors; all credits earned are applicable to a student's chosen major and maintain the student's track toward graduation.

The computing exploration option offers students the opportunity to explore the field of computing before declaring a specific major. All students in this undeclared major take a one-credit course, Computing Exploration Seminar, which provides an overview of the seven computing majors. Students learn about the course of study in each program and career opportunities in each field. Through the seminar and courses, they are introduced to the faculty, students, and laboratory facilities in each program.

While in the computing exploration option, each student will take a two-course sequence in both programming and mathematics, appropriate for all degrees. An academic advisor will consult one-on-one to ensure that each student stays on track. Students may choose a major at the end of the fall or spring semester while in the exploration program – all course work taken while in the computing exploration option will be applied to the new program of study.

Curriculum

Computing Exploration, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CINT-101	Computing Exploration Seminar	1
ISTE-140	Web and Mobile	3
MATH-181	Calculus I (General Education-Mathematical Perspective A)	4
MATH-182	Calculus II (General Education-Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
GCIS-123	Software Development and Problem Solving I	4
GCIS-124	Software Development and Problem Solving II	4
YOPS-10	RIT 365: RIT Connections	0
	General Education-First Year Writing (WI)	3
	General Education- Elective	3
Choose one of the following:		3
CSEC-140	Introduction to CyberSecurity	
NMDE-111	New Media Design Digital Survey I	
NSSA-241	Introduction to Routing and Switching	
SWEN-261	Introduction to Software Engineering	
	Wellness Education*	0
Total Semester Credit Hours		**32**

Please see General Education Framework for more information.
* Please see Wellness Education Requirements for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are preferred.
- Computing electives are preferred.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Cybersecurity, BS

www.rit.edu/study/cybersecurity-bs
Ahmed Hamza, Lecturer
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Program overview

The scope and demand of computer systems and networks, and the span of these systems, increases in organizations every day. At the same time, dependence on computer systems security and computing security technologies is growing dramatically, as is the creation of malicious software that attacks computing systems and networks. Computer systems security is now a major concern for organizations large and small to ensure information stays secure for the privacy of client/customer information, efficient business success, and smooth continuity in operations. As a result, there is an urgent demand for highly trained computing security professionals who can secure and protect an organization's digital assets from relentless attack. In addition, there is a critical need for the continued development of advanced computer security technologies, including hardware and software infrastructures, to both house valuable digital assets and ensure their protection.

RIT's Cybersecurity Bachelor's Degree

RIT's bachelor of science in cybersecurity produces professionals who understand the people and processes that impact computer systems security. In addition to acquiring state-of-the-art knowledge in protecting digital assets of large or small organizations, you will learn to proactively identify security vulnerabilities in software, hardware, and infrastructure, and provide and implement actionable solutions that protect the assets of an organization. You will learn to collect digital forensic evidence to reveal network and data breach incidents, attribute the attackers or origin of attack, assess the extent of the damage or loss of information, and design strategies that ensure information is protected from future attacks.

Cybersecurity Curriculum

In the first two years of the program, RIT's cybersecurity major provides you with a solid foundation in computer science and mathematics. Core courses include a programming sequence, an ethics course, a computer networking and system administration sequence, and foundation courses in computer and network security.

Starting in the third year, you will begin an in-depth exploration of a range of aspects of cybersecurity with advanced electives that allow you to design the focus of your cybersecurity degree. You may choose from an extensive selection of advanced topics in the areas of the network and system security, digital forensics and malware, software security, data security and privacy, and cyber analytics and intelligence. You can expand your knowledge of cybersecurity in one of several disciplines, including network and systems security, digital forensics and malware, security software, and security management. You may also use advanced elective courses to create a customized cluster to address an area of professional interest. To help you apply your cybersecurity courses to the real-world, and gain valuable career experience, you'll complete two blocks of cooperative education.

ESL Global Cybersecurity Institute: Advancing Cybersecurity Education

As a student in the cybersecurity bachelor's degree, you'll have the opportunity to take courses and participate in events at the ESL Global Cybersecurity Institute, a state-of-the-art, 52,000-square-foot facility designed for advanced cybersecurity education, training, and research. You will learn from experts who have developed a world-class curriculum that covers cybersecurity to managing information systems as you build secure systems and new technologies. You'll also have access to the Cyber Range, which generates the real world feel of responding to a cybersecurity crisis for governments and industries to test their security and identify innovative/effective solutions.

Careers in Cybersecurity

The cybersecurity field is growing rapidly, with demand for cybersecurity experts outpacing the number of students graduating from cybersecurity majors nationwide. According to the U.S. Bureau of Labor Statistics, employment in cybersecurity will grow by 31 percent by the year 2029, creating excellent career opportunities for graduates of RIT's cybersecurity degree.

Nearly every single industry needs cybersecurity experts, from aviation and banking, to automotive, health care, energy, retail, education, government, and more. You'll be well prepared for jobs in cybersecurity as a data scientist, data analyst, information security analyst, cybersecurity engineer, cybersecurity specialist, systems engineer, security architect, application security administrator, artificial intelligence security specialist, cloud security architect, cryptographer, cyber operations specialist, cybercrime Investigator, and more.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your computing co-ops will provide hands-on experience that enables you to apply your computing knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the cybersecurity bachelor's degree are required to complete two blocks of cooperative education experience.

Curriculum

Cybersecurity, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSEC-140	Introduction to Cybersecurity	3
GCIS-123	Software Development and Problem Solving I (General Education)	4
GCIS-124	Software Development and Problem Solving II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
NSSA-241	Introduction to Routing and Switching	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
CSEC-099	Cooperative Education Seminar	0
CSEC-201	Programming for Information Security	3
CSEC-202	Reverse Engineering Fundamentals	3
CSEC-499	Cooperative Education in CSEC (summer)	0
Choose one of the following:		3
MATH-241	Linear Algebra (General Education)	
STAT-257	Statistical Interference (General Education)	
MATH-251	Probability and Statistics I (General Education)	3
NSSA-221	Systems Administration I	3
NSSA-245	Network Services	3
	General Education – Social Perspective	3
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective†	4
	General Education – Scientific Principles Perspective†	4
Third Year		
CSCI-462	Introduction to Cryptography	3
CSEC-310	Endpoint Security Engineering	3
CSEC-380	Principles of Web Application Security	3
CSEC-472	Authentication and Security Models (WI-PR)	3
CSEC-499	Cooperative Education in CSEC (summer)	0
ISTE-230	Introduction to Database and Data Modeling	3
PUBL-363	Cyber Security Policy and Law (General Education)	3
	General Education – Immersion 1	3
	CSEC Electives	3
	Open Electives	6
Fourth Year		
CSEC-490	Capstone in Computing Security (WI-PR)	3
Choose one of the following:		3
PHIL-102	Introduction to Moral Issues (General Education)	
PHIL-202	Foundations of Moral Philosophy (General Education)	
PHIL-306	Professional Ethics (General Education)	
	CSEC Electives	12
	General Education – Immersion 2, 3	6
	Open Electives	6
Total Semester Credit Hours		**126**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students must complete one of the following lab science sequences: (a) University Physics I, II (PHYS-211, 212); (b) General & Analytical Chemistry I, II and Labs (CHMG-141, 142, 145, 146); or (c) General Biology I, II, and Labs (BIOL-101, 102, 103, 104). Students are free to choose from approved science electives that either extend or complement their lab science selection.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Cybersecurity, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSEC-140	Introduction to Cybersecurity	3
GCIS-123	Software Development and Problem Solving I (General Education)	4
GCIS-124	Software Development and Problem Solving II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
NSSA-241	Introduction to Routing and Switching	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Global Perspective	3
	General Education – Ethical Perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
CSEC-99	Cooperative Education Seminar (General Education)	0
CSEC-201	Programming for Information Security (General Education)	3
CSEC-202	Reverse Engineering Fundamentals	3
CSEC-499	Cooperative Education in CSEC (summer)	0
Choose one of the following:		3
MATH-241	Linear Algebra	
STAT-257	Statistical Inference	
MATH-251	Probability and Statistics I (General Education)	3
NSSA-221	Systems Administration I	3
NSSA-245	Network Services	3
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective: Lab Science I†	4
	General Education – Scientific Principles Perspective: Lab Science II†	4
Third Year		
CSEC-380	Principles of Web Application Security	3
CSEC-472	Authentication and Security Models (WI-PR)	3
CSEC-499	Cooperative Education in CSEC (summer)	0
CSCI-462	Introduction to Cryptography	3
ISTE-230	Introduction to Database and Data Modeling	3
PUBL-363	Cyber Security Policy and Law (General Education)	3
	CSEC Undergraduate Elective	3
	CSEC Graduate Elective	3
	Open Electives	6
	General Education – Immersion 1	3
Fourth Year		
Choose one of the following:		3
PHIL-102	Introduction to Moral Issues	
PHIL-202	Foundations of Moral Philosophy	
PHIL-306	Professional Ethics	
CSEC-490	Capstone in Computing Security (WI-PR)	3
	CSEC Undergraduate Electives	6
	CSEC Graduate Elective	3
	CSEC Research Elective	3
	General Education – Immersion 2, 3	6
	Open Electives	6
Fifth Year		
CSEC-790	MS Thesis	6
	Computing Security Research Elective	3
	Computing Security Graduate Electives	12
Total Semester Credit Hours		**147**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students must complete one of the following lab science sequences: University Physics I and University Physics II (PHYS-211/212), General & Analytical Chemistry I, General & Analytical Chemistry I Lab, General & Analytical Chemistry II, and General & Analytical Chemistry II Lab (CHMG-141/142/145/146), or General Biology I, General Biology I Lab, General Biology II, and General Biology II Lab (BIOL-101/102/103/104).
‡ Choose one of the following philosophy courses: Introduction to Moral Issues (PHIL-102), Foundations of Moral Philosophy (PHIL-202), or Professional Ethics (PHIL-306).

Cybersecurity, BS degree/Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSEC-140	Introduction to Cybersecurity	3
GCIS-123	Software Development and Problem Solving I	4
GCIS-124	Software Development and Problem Solving II	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing	3
NSSA-241	Introduction to Routing and Switching	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
CSEC-099	Cooperative Education Seminar	0
CSEC-201	Programming for Information Security	3
CSEC-202	Reverse Engineering Fundamentals	3
CSEC-499	Cooperative Education in CSEC (summer)	0
MATH-251	Probability and Statistics I	3
Choose one of the following:		3
MATH-241	Linear Algebra	
STAT-257	Probability and Statistics II	
NSSA-221	Systems Administration I	3
NSSA-245	Network Services	3
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective‡	4
	General Education – Scientific Principles Perspective‡	4
Third Year		
CSCI-462	Introduction to Cryptography	3
CSEC-310	Endpoint Security Engineering	3
CSEC-380	Principles of Web Application Security	3
CSEC-472	Authentication and Security Models (WI-PR)	3
CSEC-499	Cooperative Education in CSEC (summer)	0
ISTE-230	Introduction to Database and Data Modeling	3
PUBL-363	Cyber Security Policy and Law	3
	CSEC Electives	3
	Open Electives	6
	General Education – Immersion 1	3
Fourth Year		
CSEC-490	Capstone in Computing Security	3
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
Choose one of the following:		3
PHIL-102	Introduction to Moral Issues	
PHIL-202	Foundations of Moral Philosophy	
PHIL-306	Professional Ethics	
	CSEC Electives	12
	General Education – Immersion 2, 3	6
Fifth Year		
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	Public Policy Graduate Electives	6
	Graduate Elective	3
Choose one of the following:		6
PUBL-785	Capstone Research Experience	
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam Research plus 2 Graduate electives	
Total Semester Credit Hours		**150**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Choose one of the following philosophy courses: Introduction to Moral Issues (PHIL-102), Foundations of Moral Philosophy (PHIL-202), or Professional Ethics (PHIL-306).
‡ Students must complete one of the following lab science sequences: University Physics I and University Physics II (PHYS-211/212), General & Analytical Chemistry I, General & Analytical Chemistry I Lab, General & Analytical Chemistry II, and General & Analytical Chemistry II Lab (CHMG-141/142/145/146), or General Biology I, General Biology I Lab, General Biology II, and General Biology II Lab (BIOL-101/102/103/104).

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are preferred.
- Computing electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in computer science, calculus, liberal arts; calculus-based physics, chemistry, or biology

Appropriate associate degree programs for transfer

AS degree in computer science, engineering science, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Game Design and Development, BS

www.rit.edu/study/game-design-and-development-bs
Elouise Oyzon, Associate Professor
585-475-5910, eroics@rit.edu

Program overview

Game design and development emphasizes game programming within a core computing education to prepare students for careers in the game, simulation, modeling, training, and visualization industries. The emphasis on computing fundamentals gives students more career options and also prepares them for graduate school. Students gain a breadth of knowledge in game design, interactive media, user interaction, animation, modeling, math, science, and design in the context of computational game development. Students can further specialize in engines, graphics, audio, narrative, and more with elective choices that span the entire university.

The game design and development major allows students to explore the entertainment technology landscape and related areas, while still pursuing a broad-based university education. The degree is intended specifically for students who aspire to hold careers within the professional games industry or a related field, such as simulation, edutainment, or visualization. This degree also provides students with a core computing education that prepares them for graduate study or employment in a number of computing fields.

With an emphasis on game programming, the major exposes students to a breadth of development and design processes. Students complete a core of required course work and then pursue advanced studies that can be customized to individual interests and career goals. Students can further specialize their major by taking electives in areas such as game design, production, engines and systems, graphics programming and animation, mobile, web, audio, and more. This depth of course work also enables students to build a robust portfolio of games and other interactive projects. Students are required to complete two blocks of co-op, which may start after their second year of study. Although students usually complete co-ops during the summer term, they may also be completed during the academic year.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your computing co-ops will provide hands-on experience that enables you to apply your computing knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the game design degree are required to complete two blocks of cooperative education experience.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Game Design and Development, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
IGME-105	Game Development and Algorithmic Problem Solving I (General Education)	4
IGME-106	Game Development and Algorithmic Problem Solving II (General Education)	4
IGME-110	Introduction to Interactive Media (General Education)	3
IGME-119	2D Animation and Asset Production	3
MATH-131	Discrete Mathematics (General Education – Mathematical Perspective A)	4
MATH-185	Mathematics of Graphical Simulation I (General Education – Mathematical Perspective B)	3
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Social Perspective	3
Second Year		
IGME-099	Co-op Preparation Workshop	0
IGME-202	Interactive Media Development	3
IGME-209	Data Structures & Algorithms for Games & Simulations I	3
IGME-219	3D Animation and Asset Production	3
IGME-220	Game Design & Development I	3
IGME-235	Introduction to Web Technology for Game Developers	3
IGME-236	Interaction, Immersion, & the Media Interface (WI-PR)	3
IGME-499	Undergraduate Co-op (summer)	0
Choose one of the following:		3
MATH-171	Calculus A	
MATH-181	Calculus I	
	General Education – Ethical Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Artistic Perspective	3
Third Year		
IGME-309	Data Structures & Algorithms for Games & Simulations II	3
IGME-320	Game Design & Development II	3
Choose one of the following:		3
IGME-330	Rich Media Web Application Development I	
IGME-330H	Honors Rich Media Web Application Development I	
IGME-499	Undergraduate Co-op (summer)	0
	General Education- Global Perspective	3
	General Education – Immersion 1, 2	6
	General Education – Electives	3
	Advanced Elective	3
	Open Electives	6
Fourth Year		
	Advanced Electives	9
	Open Electives	9
	General Education – Immersion 3	3
	General Education – Electives	9
Total Semester Credit Hours		**121**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Advanced Electives

IGME-340	Multi-platform Media App Development
IGME-350	International Game Industry
IGME-382	Maps, Mapping and Geospatial Technologies
IGME-384	Introduction to Geographic Information Systems
IGME-386	Spatial Algorithms and Problem Solving
IGME-420	Level Design
IGME-422	Level Design 2
IGME-423	Games for Change
IGME-430	Rich Media Web Application Development II
IGME-431	Digital Video for the Web
IGME-450	Casual Game Development
IGME-451	Systems Concepts for Games and Media
IGME-460	Data Visualization
IGME-470	Physical Computing & Alternative Interfaces
IGME-480	Current Topics in Interactive Development
IGME-484	Geographic Visualization
IGME-529	Foundations of Interactive Narrative
IGME-531	Aesthetics and Computation
IGME-540	Foundations of Game Graphics Programming
IGME-550	Foundations of Game Engine Design and Development
IGME-560	Artificial Intelligence for Game Environments
IGME-570	Digital Audio Production
IGME-571	Interactive Game Audio
IGME-580	IGM Production Studio
IGME-588	New Media Interactive Development Capstone II
IGME-589	Research Studio
IGME-590	Undergraduate Seminar in IGM
IGME-599	Independent Study
IGME-601	Game Development Processes
IGME-602	Game Design
IGME-603	Gameplay and Prototyping
IGME-621	Board and Card Game Design and Development
IGME-622	Game Balance
IGME-623	Theory and Design of Role Play and Interactive Narrative
IGME-624	Tabletop Role-Playing Game Design and Development
IGME-670	Digital Audio Production
IGME-671	Interactive Game and Audio
IGME-680	IGM Production Studio
IGME-690	IGM Seminar
ISTE-230	Introduction to Database and Data Modeling
ISTE-454	Mobile Application Development I
ISTE-456	Mobile Application Development II

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Game Design and Development, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
IGME-105	Game Development and Algorithmic Problem Solving I (General Education)	4
IGME-106	Game Development and Algorithmic Problem Solving II (General Education)	4
IGME-110	Introduction to Interactive Media (General Education)	3
IGME-119	2D Animation and Asset Production	3
MATH-131	Discrete Mathematics (General Education – Math Perspective A)	4
MATH-185	Mathematics of Graphical Simulation I (General Education – Math Perspective B)	3
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
Second Year		
Choose one of the following:		3
MATH-171	Calculus A	
MATH-181	Calculus I	
IGME-099	Co-op Preparation Workshop	0
IGME-202	Interactive Media Development	3
IGME-209	Data Structures and Algorithms for Games and Simulations I	3
IGME-219	3D Animation and Asset Production	3
IGME-220	Game Design & Development I	3
IGME-235	Introduction to Web Technology for Game Developers	3
IGME-236	Interaction, Immersion, & the Media Interface (WI-PR)	3
IGME-499	Undergraduate Co-op (summer)	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Scientific Principles Perspective	3
Third Year		
IGME-309	Data Structures and Algorithms for Games and Simulations II	3
IGME-320	Game Design and Development II	3
Choose one of the following:		3
IGME-330	Rich Media Web Application Development I	
IGME-330H	Honors Rich Media Web Application Development I	
IGME-499	Undergraduate Co-op	0
	General Education – Immersion 1, 2	6
	General Education – Electives	3
	General Education- Global Perspective	3
	Advanced Elective	3
	Open Electives	6
Fourth Year		
IGME-601	Game Development Processes	3
IGME-602	Game Design	3
IGME-603	Gameplay and Prototyping	3
IGME-695	Colloquium in Game Design and Development	1
IGME-795	Game Industry Themes and Perspectives	1
	Graduate IGM Electives	6
	Open Elective	3
	General Education – Immersion 3	3
	General Education – Electives	9
Fifth Year		
IGME-695	Colloquium in Game Design and Development	1
IGME-788	Capstone Design	3
IGME-789	Capstone Development	3
	Graduate IGM Electives	9
	Open Electives	6
Total Semester Credit Hours		**145**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Student may select one of the following math courses: Mathematics of Graphical Simulation II (MATH-186), Calculus A (MATH-171), Project-Based Calculus I (MATH-181), or Calculus I (MATH-181A).

IGM/Graduate Advanced Electives

IGME-621	Board and Card Game Design and Development
IGME-622	Game Balance
IGME-623	Theory and Design of Role Play and Interactive Narrative
IGME-624	Table Top Role-Playing Game Design and Development
IGME-670	Digital Audio Production
IGME-671	Interactive Game and Audio
IGME-680	IGM Production Studio
IGME-690	IGM Seminar
IGME-730	Game Design and Development for Casual and Mobile Platforms
IGME-740	Game Graphics Programming
IGME-742	Level Design
IGME-750	Game Engine Design and Development
IGME-753	Console Development
IGME-760	Artificial Intelligence for Gameplay
IGME-790	Graduate Seminar in IGM
IGME-796	Advanced Topics in Game Design
IGME-797	Advanced Topics in Game Development
IGME-799	Independent Study
CSCI-610	Foundations of Computer Graphics
CSCI-711	Global Illumination
CSCI-712	Computer Animation: Algorithms and Techniques
CSCI-713	Applied Perception in Graphics and Visualization

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are preferred.
- Computing electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in computer science, calculus, liberal arts; calculus-based physics, chemistry, or biology

Appropriate associate degree programs for transfer

AS degree in computer science, engineering science, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Human-Centered Computing, BS

www.rit.edu/study/human-centered-computing-bs
Dan Bogaard, Associate Professor
585-475-5231, Dan.Bogaard@rit.edu

Program overview

With a growing reliance on computing in our daily lives, technology is no longer the exclusive realm of tech-savvy users. This computing degree blends strengths from varied disciplines to understand the ways in which people use technology, and how technologies can be developed that are more intuitive and usable.

What is Human-Centered Computing?

Fundamental to human-centered computing is a focus on humans as individuals and how they behave with technology. Students in this major find themselves at the intersection of computer advancements and human behavior around technology. Topics of consideration include the design, evaluation, and implementation of interactive computing systems and understanding the ways in which such systems can transform our lives. Given the growing reliance on computing in our everyday lives, technology no longer is the exclusive realm of tech-savvy users; industry has recognized the need to make software and devices that are usable and desirable to everyone. This major prepares you for careers in industry or to pursue graduate study, offering options for you to specialize in different areas of computing depending on individual interests in computing, design, or psychology.

Human-centered computing degrees are about leveraging technology, and exploring and adapting how people access and interact with it. Finding ways to integrate technology with our everyday lives—regardless of our physical capabilities, age, or location—is a key component of the program. HCC professionals are changing the world every day. HHC professionals have pioneered a range of development, including creating ways for computers to reproduce realistic animations of American Sign Language, designing the successor for the Fitbit, or building the next generation of speech recognition software. HCC students are the driving force at the center of the global accessibility effort.

RIT's Human-Centered Computing Degree

The human-computer relationship is constantly evolving, and the days of the singular do everything device is disappearing. New innovations promise a future of multiple, interconnected technologies that respond to our needs in real time. The world needs professionals that are able to design, prototype, implement, and evaluate interactive computing systems. These skills make up the core of the HCC degree.

The computing degree is unique in its foundation of courses grounded in psychology, design, and technology. The curriculum combines courses from three different RIT colleges to ensure students develop a firm understanding of these diverse subjects. Core courses include several foundational classes in technology, cognitive science and psychology, Gestalt, color theory, and creative thinking. This is an interdisciplinary degree with six concentrations, allowing you to immerse yourself in two areas you find most interesting.

- Accessibility: Learn to develop systems that are equally accessible to all people, making the benefits of technology a reality for everyone.
- Design: Learn to integrate elements of imagery, type, actions, color, and more to form a unified graphical interface that is understandable to people everywhere.
- Front End Development: Master programming and development for desktop, web, and mobile computing interfaces, with a focus on efficient code and meeting user needs.
- Instructional Technology: Plan, organize and develop systems to effectively leverage technology to convey knowledge and skills to users.
- Natural Language Processing: Study the interactions between computers and human language. Learn about the latest advances in computational linguistics and how computers derive meaning via natural language processing.
- Psychology: Explore how humans perceive, process, and store information. Study best practices in research and evaluation, and learn how to implement them into your work.

The major also requires students to complete two blocks of cooperative education, which may begin after the second year of study.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your computing co-ops will provide hands-on experience that enables you to apply your computing knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the human-centered computing degree are required to complete two blocks of cooperative education experience.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Human-Centered Computing, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ISTE-110	FYW: Ethics in Computing (WI) (General Education – First-Year Writing)	3
ISTE-140	Web & Mobile I	3
ISTE-262	Foundations of Human Centered Computing	3
NMDE-111	New Media Digital Design Survey I	3
PSYC-101	Introduction to Psychology (General Education – Scientific Principles Perspective)	3
PSYC-223	Cognitive Psychology (General Education)	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	Open Elective	3
Second Year		
ISTE-99	School of Information Second Year Seminar	0
ISTE-240	Web & Mobile II	3
ISTE-264	Prototyping and Usability Testing	3
ISTE-266	Design for Accessibility	3
ISTE-499	Undergraduate Co-op (summer)	0
NMDE-112	New Media Digital Design Survey II	3
PSYC-250	Research Methods I (WI-PR) (General Education)	3
PSYC-251	Research Methods II (WI-PR) (General Education)	3
GCIS-123	Software Development and Problem Solving I (General Education)	4
GCIS-124	Software Development and Problem Solving II (General Education)	4
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective	3
Third Year		
ISTE-252	Foundations of Mobile Design	3
Choose one of the following:		0
ISTE-498	Undergraduate Creative, Innovative or Research Experience	
ISTE-499	Undergraduate Co-op (summer)	0
	HCC Concentration Courses	12
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Immersion 1	3
	Open Electives	6
Fourth Year		
ISTE-500	Senior Development Project I	3
ISTE-501	Senior Development Project II (WI-PR)	3
	HCC Concentration Courses	6
	General Education – Ethical Perspective	3
	General Education – Immersion 2, 3	6
	Open Elective	3
	General Education - Elective	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Concentrations

Accessibility

ISTE-464	Accessibility Through the Lifespan
ISTE-562	Research in Accessibility
ISTE-563	Access & Assistive Technology

Design

NMDE-201	New Media Design Elements II
NMDE-203	New Media Design Interactive II
NMDE-302	New Media Design Graphical User Interface

Front End Development

ISTE-340	Client Programming
ISTE-454	Mobile Application Development I
ISTE-456	Mobile Application Development II

Instructional Technology

ISTE-560	Fundamentals of Instructional Technology
ISTE-561	Interactive Courseware
PSYC-235	Learning and Behavior

Natural Language Processing

ENGL-351	Language Technology (required)
LING-581	Natural Language Processing I (required)
Plus one of the following:	
LING-582	Natural Language Processing II
LING-584	Undergraduate Speech Processing

Psychology

PSYC-430	Memory and Attention
PSYC-431	Language and Thought
PSYC-432	Decision Making, Judgment and Problem Solving

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are preferred.
- Computing electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in computer science, calculus, liberal arts; calculus-based physics, chemistry, or biology

Appropriate associate degree programs for transfer

AS degree in computer science, engineering science, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

New Media Interactive Development, BS

www.rit.edu/study/new-media-interactive-development-bs
Elouise Oyzon, Associate Professor
585-475-5910, eroics@rit.edu

Program overview

The field of new media explores new and evolving digital technologies—the internet, social software, hand-held and wearable devices, touch and gestural interfaces, the Internet of Things, virtual reality, augmented reality, and more—to create interactive and engaging digital experiences.

In the new media interactive development major, you'll learn the programming and computing skills for multiple interfaces, as well as the interactive design skills needed to create outstanding user interaction. You can focus your studies on a specific area of new media to truly explore your interests and adapt your skills to a range of emerging technologies.

What is New Media?

New media is an ever-changing form of digital communication that engages, immerses, and often entertains users.

The term new media was first coined in the mid-80s to refer to the impact computing was beginning to have on traditional forms of media, like newspapers, radio, and television. But as digital platforms began to evolve beyond the internet, new media came to encompass all types of information and entertainment accessed by our computers, phones, and tablets. New media now encompasses anything that integrates communication, computing, and technology – from social media networks (Facebook, Instagram) and music and television streaming services (Spotify, Hulu, Amazon Prime), to highly interactive digital technologies like wearables (Apple Watch, FitBit), virtual reality, augmented reality, and gaming.

A Dynamic Degree for Interactive Media Design

In the new media interactive development degree, your course work is concentrated on programming and interactive development with in depth classes on topics such as mobile development and alternative interfaces, website design and implementation, physical/wearable computing, game design, game development, design and media production, interactive audio, and more. You'll build professional-quality web sites, apps for mobile devices and tablets, and create social networking applications that connect people with technology and each other. You'll learn to program using current and emerging technologies for interactive web design, touchscreens, wearables, and interactive objects in a digital environment. In addition, course work in design principles will make the interactive experiences you build look polished and captivating. Two blocks of cooperative education experience gives you full-time, paid experience working in industry.

Compelling interactive design requires collaboration with designers. As a new media interactive development student, you'll benefit from a close partnership with students in RIT's new media design major, which focuses heavily on the design aspect of interactive media. Courses in this program address interactive media design from a design perspective and emphasize visual communication, 2D and 4D design, animation, and design strategy. Both programs share core courses in programming and design, enabling students in both majors to develop the complimentary skill sets needed for success in the industry.

Your senior year concludes with New Media Design Capstone I and II, a two-course, two-semester capstone project in which you'll team up with students from the new media interactive development major to work on a project for a corporate client looking for a solution to a digital challenge their organization faces. You'll gain the teamwork experience needed as you learn to develop, navigate, and leverage the designer-programmer-client relationship. With many courses both project- and team-based, you'll build a robust portfolio of interactive projects, positioning you well to showcase your skills, capabilities, and knowledge to prospective employers upon graduation. View samples of new media team projects to see what our teams have created.

Interested in seeing what our students can do in interaction design? View a collection of student work in the IGM Gallery.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your computing co-ops will provide hands-on experience that enables you to apply your computing knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the new media interactive development degree are required to complete two blocks of cooperative education experience.

Careers in Interactive Design

Interaction designers are in demand. All kinds of companies and organizations seek interaction designers for a range of positions in which an organization needs dynamic and innovative digital experiences and creative design solutions.

A sampling of companies that have hired graduates of RIT's new media interactive development major includes American Greetings, Bottomline Technologies, Fidelity Investments, Forbes Media, GeekHive, IBM, JPMorgan Chase & Co, LenelS2, M&T Bank, MassMutual, Southwest Airlines, TD Bank, and Wegmans Food Markets.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

New Media Interactive Development, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
IGME-101	New Media Interactive Design and Algorithmic Problem Solving I	4
IGME-102	New Media Interactive Design and Algorithmic Problem Solving II	4
IGME-110	Introduction to Interactive Media	3
MATH-131	Discrete Mathematics	4
MATH-185	Mathematics of Graphical Simulation I (General Education – Mathematical Perspective A)	3
NMDE-111	New Media Design Digital Survey I	3
NMDE-112	New Media Design Digital Survey II	3
YOPS-010	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Artistic Perspective	3
Second Year		
IGME-099	Co-op Preparation Workshop	0
IGME-201	New Media Interactive Design and Algorithmic Problem Solving III	3
IGME-202	Interactive Media Development	3
Choose one of the following:		3
IGME-230	Website Design & Implementation	
IGME-235	Introduction to Web Technology for Game Developers	
IGME-236	Experience Design for Games & Media (WI-PR)	3
Choose one of the following:		3
IGME-330	Rich Media Web Application Development I	
IGME-330H	Honors Rich Media Web Application Development I	
IGME-499	Undergraduate Co-op (summer)	0
STAT-145	Introduction to Statistics† (General Education – Mathematical Perspective B)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective‡	3
	General Education – Ethical Perspective	3
Third Year		
Choose one of the following:		3
IGME-340	Multi-platform Media App Development	
ISTE-454	Mobile Application Development I	
ISTE-456	Mobile Application Development II	
ISTE-230	Introduction to Database and Data Modeling (General Education)	3
IGME-430	Rich Media Web Application Development II	3
IGME-470	Physical Computing & Alternative Interfaces	3
IGME-480	Current Topics in Interactive Development	3
IGME-499	Undergraduate Co-op (summer)	0
	Open Electives	6
	General Education – Immersion 1, 2	6
	General Education – Natural Science Inquiry Perspective	3
Fourth Year		
IGME-588	New Media Interactive Development Capstone II	3
Choose one of the following:		3
IGME-587	New Media Interactive Development Capstone I	
NMDE-401	New Media Design Capstone I	
	New Media Interactive Development Advanced Electives	6
	Open Electives	9
	General Education – Immersion 3	3
	General Education – Electives	6
Total Semester Credit Hours		**120**

Please see General Education (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students have the option of taking Introduction to Statistics I (STAT-145) or one of the following math courses: Calculus A (MATH-171), Calculus (MATH-181), or Calculus I (MATH-181A).
‡ Students satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and the lab portions to fulfill the requirement.

New Media Interactive Development Advanced

Electives

COURSE	
FNRT-328	Composing for Video Games and Interactive Media
IGME-119	2D Animation and Asset Production
IGME-219	3D Animation and Asset Production
IGME-340	Multi-platform Media App Development
IGME-350	International Game Industry
IGME-382	Maps, Mapping and Geospatial Technologies
IGME-386	Spatial Algorithms and Problem Solving
IGME-423	Games for Change
IGME-431	Digital Video for the Web
IGME-450	Casual Game Development
IGME-460	Data Visualization
IGME-480	Current Topics in Interactive Development
IGME-529	Foundations of Interactive Narrative
IGME-531	Aesthetics and Computation
IGME-580	IGM Production Studio
IGME-589	Research Studio
IGME-590	Undergraduate Seminar in IGM
IGME-599	Independent Study
IGME-670	Digital Audio Production
IGME-671	Interactive Game and Audio
IGME-680	IGM Production Studio
IGME-690	IGM Seminar
ISTE-454	Mobile Application Development I
ISTE-456	Mobile Application Development II
ISTE-458	Advanced Topics in Wearable & Ubiquitous Computing
ISTE-470	Data Mining and Exploration
LING-581	Natural Language Processing I
NMDE-201	New Media Design Elements II
NMDE-203	New Media Design Interactive II
NMDE-302	New Media Design Graphical User Interface

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are preferred.
- Computing electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in computer science, calculus, liberal arts; calculus-based physics, chemistry, or biology

Appropriate associate degree programs for transfer

AS degree in computer science, engineering science, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Software Engineering, BS

www.rit.edu/study/software-engineering-bs
Andy Meneely, Associate Professor
585-475-7829, Andy.Meneely@rit.edu

Program overview

As software becomes ever more common in everything from airplanes to appliances, there is an increasing demand for engineering professionals who can develop high-quality, cost-effective software systems. The BS in software engineering combines traditional computer science and engineering with specialized course work in software engineering. This software development degree encompasses technical issues affecting software architecture, design, and implementation as well as process issues that address project management, planning, quality assurance, and product maintenance. Students are prepared for immediate employment and long-term professional growth in a range of software development organizations.

Students learn principles, methods, and techniques for the construction of complex and evolving software systems. The major encompasses technical issues affecting software architecture, design, and implementation as well as process issues that address project management, planning, quality assurance, and product maintenance. Upon graduation, students are prepared for immediate employment and long-term professional growth in software development organizations.

We offer a challenging undergraduate program that prepares students for the demands and challenges of the software industry. The undergraduate degree consists of both core and elective courses that focus on the software engineering lifecycle. In addition, each student must complete a senior project on a team of four or five students.

Plan of Study

The software engineering program has four key elements: engineering design, software product development, teamwork, and communication. The curriculum ensures that the student's coursework balances between software design principles and software process practices. In every course, teamwork is emphasized with a significant part of the final grade being based on team project activities. By the time our students start their senior project, they will have worked on 20 to 25 different student teams in their software engineering courses. Software engineering students also develop their communication skills. In every course, they will be preparing engineering documentation, such as requirements documents, design documents, project plans, burndown charts, and software test plans. Also, at the end of each project cycle, the students make oral presentations on their work and receive critique from the instructor and other students in the class.

The software engineering program focuses on developing skills to:

- Model and analyze proposed and existing software systems, especially through the use of discrete mathematics and statistics.
- Apply quality principles to the definition of software systems and processes.
- Analyze and design complex software systems using contemporary principles such as cohesion and coupling, abstraction and encapsulation, design patterns, frameworks, and architectural styles.
- Apply contemporary software engineering methods to planning, management, and development of software systems.
- Accurately communicate technical material related to all phases of the software life cycle via concise and correct documents, graphics and oral presentations.
- Work in small teams to develop a software system. This includes the ability to assume distinct operational roles (e.g., configuration management, quality assurance) in addition to design and implementation.
- Assess the social, environmental, and cultural factors arising from existing software systems as well as potential risks of proposed systems with a clear understanding of the ethical and professional responsibilities necessary for different software product lines.
- Relate principles of software engineering to at least one application domain where those principles can be applied.
- Explore new topics in software engineering or related application domains with limited oversight and input from faculty or mentors.
- Rapidly learn, assess, and adapt to new languages, environments, and paradigms for software development.

With the skills obtained in our program, software engineering students will be able to design and build quality software solutions that meet the customer's requirements, are delivered on time, without defects, and within budget.

An important component of the curriculum is the complementary course work in related disciplines. As with other engineering fields, mathematics and the natural sciences are fundamental. In addition, students must complete courses in related fields of engineering, business, or science. Two engineering electives, plus a three-course sequence in an application domain, enable students to connect software engineering principles to application areas. A required course in economics or finance bridges software engineering with the realities of the business environment.

Students are required to complete 40 weeks of cooperative education prior to graduation. Students typically begin co-op in their third year of study, alternating semesters of study on campus with co-op blocks. To ensure that co-op is integrated with the curriculum, students must complete their final co-op block prior to taking Software Engineering Project I.

Students also complete general education courses in the liberal arts to develop a sense of professionalism and social responsibility in the technical world.

Engineering Electives

Students may choose engineering electives from software engineering, computer science, or majors in the Kate Gleason College of Engineering. Additional rules and restrictions are listed in the curriculum section.

Senior Design Project

A two-course senior design project helps students synthesize and apply the knowledge and experience they have gained in classes and on co-op assignments to an industry-sponsored project. Organizations with challenging technical problems frequently contact faculty seeking assistance in defining a solution. Many of these issues find their resolution via the work of the software engineering senior project teams.

In the first course, students organize themselves into teams, based on the number and complexity of the projects available. The bulk of the semester is devoted to requirements elicitation and architectural design, but also may include detailed design, prototyping, and even production, depending on the nature of the project. In addition, teams are responsible for assigning specific roles to team members and developing a project plan that includes scheduled concrete milestones. In the second course, students work on the tactical issues of development and deployment. Teams complete the construction and integration of their project,

conduct testing, and demonstrate the final outcome to faculty and the sponsoring organization.

Organizations that have sponsored senior projects include Wegmans, Paychex, Moog, Northrup Grumman Security Systems, Intel Corp., Webster Financial Group, Oracle, Nokia, IBM Thomas Watson Research, PaeTec Communications, Alstom Signaling Inc., RIT Information and Technology Services, Harris Corporation (RF Communications Division), the Air Force Research Laboratory, Excellus Blue Cross Blue Shield, Telecom Consulting Group NE Corp. (TCN), and Videk.

Laboratories

Equipped with the latest technology, the software engineering department's facilities include three student instructional studio labs, a specialized embedded systems lab, and a collaboration lab. In addition, freshmen are encouraged to take advantage of the department's mentoring lab. Staffed by advanced software engineering students, this lab offers new students an environment where they can learn from those who have successfully fulfilled most of the major's academic requirements.

Students enrolled in software engineering courses also can use any of the department's eleven team rooms. Equipped with a computer and projector, network connections, a meeting table, seating for six, and generous whiteboard space, these rooms support the department's commitment to teamwork, both inside and outside the classroom.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

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Co-ops and internships take your knowledge and turn it into know-how. Your computing co-ops will provide hands-on experience that enables you to apply your computing knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the software engineering degree are required to complete three blocks (40 weeks) of cooperative education experience.

Curriculum

Software Engineering, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
GCIS-123	Software Development and Problem Solving I (General Education)	4
GCIS-124	Software Development and Problem Solving II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
SWEN-101	Software Engineering Freshman Seminar	1
SWEN-250	Personal Software Engineering	3
YOPS-010	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
ENGL-150	Future of Writing (WI) (General Education –First-Year Writing)	3
Second Year		
COMM-253	Communication (WI) (General Education)	3
PHYS-211	University Physics I (General Education – Natural Science Inquiry Perspective)	4
PHYS-212	University Physics II (General Education – Scientific Principles Perspective)†	4
Choose one of the following:		3
MATH-251	Probability and Statistics (General Education)	
STAT-205	Applied Statistics (General Education)	3
SWEN-099	Undergraduate Cooperative Education Seminar	0
SWEN-256	Software Process and Project Management	3
SWEN-261	Introduction to Software Engineering	3
SWEN-262	Engineering of Software Subsystems	3
SWEN-344	Engineering of Web Based Software Systems	3
SWEN-488	Software Engineering Summer Co-op	0
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
MATH-241	Linear Algebra (General Education)	3
SWEN-340	Software Design for Computing Systems	3
Choose one of the following:		3
SWEN-444	Human-Centered Requirements and Design	
SWEN-445	Honors Human-Centered Requirements and Design	
SWEN-499	Software Engineering Co-op (spring)	0
	General Education – Immersion 1	3
	Software Engineering Process Elective	3
Fourth Year		
Choose one of the following:		3
CSCI-261	Analysis of Algorithms	
CSCI-264	Honors Analysis of Algorithms	
SWEN-331	Engineering Secure Software	3
SWEN-440	Software System Requirements and Architecture (WI-PR)	3
SWEN-499	Software Engineering Co-op (spring)	0
	General Education – Immersion 2	3
	General Education – Math/Science Elective	3
Fifth Year		
SWEN-561	Software Engineering Project I	3
SWEN-562	Software Engineering Project II	3
	Engineering Elective	3
	General Education – Immersion 3	3
	General Education – Math/Science Elective	3
	Professional Elective	3
	Software Engineering Design Elective	3
	Open Electives	12
Total Semester Credit Hours		**127**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students must complete one of the following lab sciences: University Physics II (PHYS-212); University Physics II: AP-C Electricity & Magnetism and University Physics II: AP-C Optics (PHYS-208/209); General Chemistry for Engineers and General & Analytical Chemistry I Lab (CHMG-131/145); General & Analytical Chemistry I and Lab (CHMG-141/145); General Biology I and Lab (BIOL-101/103); Explorations in Cellular Biology and Evolution and Lab (BIOG-101/103); General Biology II and Lab (BIOL-102/104); or Explorations in Animal and Plant Anatomy and Physiology and Lab (BIOG-102/104).

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Pathways enable you to earn both a bachelor's and a master's degree in as little as five years of study. You'll earn two degrees while gaining the valuable, hands-on experience that comes from co-ops, internships, research, study abroad, and more. Learn how a Combined Accelerated Pathway can prepare you for your future, faster.

Software Engineering, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
GCIS-123	Software Development and Problem Solving I (General Education)	4
GCIS-124	Software Development and Problem Solving II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
SWEN-101	Software Engineering Freshman Seminar	1
SWEN-250	Personal Software Engineering	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
Second Year		
COMM-253	Communication (WI) (General Education)	3
PHYS-211	University Physics I (General Education – Natural Science Inquiry Perspective)	4
PHYS-212	University Physics II (General Education – Scientific Principles Perspective†)	4
STAT-205	Applied Statistics (General Education)	3
SWEN-99	Undergraduate Cooperative Education Seminar	0
SWEN-256	Software Process and Project Management	3
SWEN-261	Introduction to Software Engineering	3
SWEN-262	Engineering of Software Subsystems	3
SWEN-344	Engineering of Web Base Software Systems	3
SWEN-488	Software Engineering Summer Co-op (summer)	0
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
MATH-241	Linear Algebra (General Education)	3
SWEN-340	Software Design for Computing Systems	3
SWEN-444	Human-Centered Requirements and Design	3
SWEN-499	Software Engineering Co-op (spring)	0
	General Education – Immersion 1	3
	Professional Elective	3
Fourth Year		
SWEN-331	Engineering Secure Software	3
SWEN-440	Software System Requirements and Architecture (WI-PR)	3
SWEN-499	Software Engineering Co-op (spring)	0
Choose one of the following:		3
CSCI-261	Analysis of Algorithms	
CSCI-264	Honors Analysis of Algorithms	
	General Education – Math/Science Elective	3
	General Education – Immersion 2	3
Fifth Year		
SWEN-561	Software Engineering Project I	3
SWEN-562	Software Engineering Project II	3
SWEN-640	Research Methods	3
SWEN-732	Collaborative Software Development	3
SWEN-746	Model-Driven Development	3
	Software Engineering Design Elective	3
	General Education – Math/Science Elective	3
	General Education – Immersion 3	3
	Open Electives	12
Sixth Year		
SWEN-755	Software Architecture	3
SWEN-777	Software Quality Assurance	3
SWEN-790	Thesis	6
SWEN-799	Independent Study	3
	Graduate Electives	6
Total Semester Credit Hours		**151**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
*Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students must complete one of the following lab sciences: University Physics II (PHYS-212); University Physics II: AP-C Electricity & Magnetism and University Physics II: AP-C Optics (PHYS-208/209); General Chemistry for Engineers and General & Analytical Chemistry I Lab (CHMG-131/145); General & Analytical Chemistry I and Lab (CHMG-141/145); General Biology I and Lab (BIOL-101/103); Explorations in Cellular Biology and Evolution and Lab (BIOG-101/103); General Biology II and Lab (BIOL-102/104); or Explorations in Animal and Plant Anatomy and Physiology and Lab (BIOG-102/104).

Software Engineering, BS degree/Cybersecurity, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
SWEN-101	Software Engineering Freshman Seminar	1
GCIS-123	Software Development and Problem Solving I (General Education)	4
GCIS-124	Software Development and Problem Solving II (General Education)	4
SWEN-250	Personal Software Engineering	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical perspective	3
	General Education – Artistic perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
COMM-253	Communication (WI) (General Education)	3
PHYS-211	University Physics I (General Education – Natural Science Inquiry Perspective)	4
PHYS-212	University Physics II (General Education – Scientific Principles Perspective)†	4
STAT-205	Applied Statistics (General Education)	3
SWEN-99	Undergraduate Cooperative Education Seminar	0
SWEN-256	Software Process and Project Management	3
SWEN-261	Introduction to Software Engineering	3
SWEN-262	Engineering of Software Subsystems	3
SWEN-344	Engineering of Web Based Software Systems	3
SWEN-488	Software Engineering Summer Co-op (summer)	0
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
CSCI-261	Analysis of Algorithms	3
SWEN-444	Human-Centered Requirements and Design	3
SWEN-499	Software Engineering Co-op (spring)	0
	Software Engineering Process Elective	3
	General Education – Immersion 1	3
	General Education – Math/Science Elective	3
Fourth Year		
MATH-241	Linear Algebra (General Education)	3
SWEN-331	Engineering Secure Software	3
SWEN-340	Software Design of Computing Systems	3
SWEN-440	Software System Requirements and Architecture (WI-PR)	3
SWEN-499	Software Engineering Co-op (spring)	0
	General Education – Immersion 2	3
Fifth Year		
SWEN-561	Software Engineering Project I	3
SWEN-562	Software Engineering Project II	3
	Computing Security Graduate Electives	6
	General Education – Immersion 3	3
	Software Engineering Design Elective	3
	Engineering Elective	3
	Open Electives	6
	Professional Elective	3
	General Education – Math/Science Elective	3
Sixth Year		
CSEC-604	Cryptography and Authentication	3
CSEC-742	Computer System Security	3
CSEC-790	MS Thesis	6
	Computing Security Graduate Electives	6
	Computing Security Research Electives	6
Total Semester Credit Hours		**151**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students must complete one of the following lab sciences: University Physics II (PHYS-212); University Physics II: AP-C Electricity & Magnetism and University Physics II: AP-C Optics (PHYS-208/209); General Chemistry for Engineers and General & Analytical Chemistry I Lab (CHMG-131/145); General & Analytical Chemistry I and Lab (CHMG-141/145); General Biology I and Lab (BIOL-101/103); Explorations in Cellular Biology and Evolution and Lab (BIOG-101/103); General Biology II and Lab (BIOL-102/104); or Explorations in Animal and Plant Anatomy and Physiology and Lab (BIOG-102/104).

Software Engineering, BS degree/Computer Science, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
MATH-190	Discrete Mathematics for Computing (General Education)	3
SWEN-101	Software Engineering Freshman Seminar	1
SWEN-123	Software Development and Problem Solving I (General Education)	4
SWEN-124	Software Development and Problem Solving II (General Education)	4
SWEN-250	Personal Software Engineering	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
COMM-253	Communication (WI) (General Education)	3
PHYS-211	University Physics I (General Education – Natural Science Perspective)	4
PHYS-212	University Physics II (General Education – Scientific Principles Perspective)†	4
STAT-205	Applied Statistics (General Education)	3
SWEN-99	Undergraduate Cooperative Education Seminar	0
SWEN-256	Software Process and Project Management	3
SWEN-261	Introduction to Software Engineering	3
SWEN-262	Engineering of Software Subsystems	3
SWEN-344	Engineering of Web Based Software Systems	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
CSCI-261	Analysis of Algorithms	3
MATH-241	Linear Algebra (General Education)	3
SWEN-444	Human-Centered Requirements and Design	3
SWEN-499	Software Engineering Co-op (fall)	0
	Software Engineering Process Elective	3
	General Education – Immersion 1	3
Fourth Year		
SWEN-331	Engineering Secure Software	3
SWEN-340	Software Design of Computing Systems	3
SWEN-440	Software System Requirements and Architecture (WI-PR)	3
SWEN-488	Software Engineering Summer Co-op (summer)	0
SWEN-499	Software Engineering Co-op (spring)	0
	General Education – Math/Science Elective	3
	General Education – Immersion 2	3
Fifth Year		
SWEN-561	Software Engineering Project I	3
SWEN-562	Software Engineering Project II	3
CSCI-664	Computational Complexity	3
	Graduate Computer Science Foundation Course	3
	General Education – Immersion 3	3
	Software Engineering Design Elective	3
	Open Electives	12
	General Education – Math/Science Elective	3
Sixth Year		
CSCI-620	Introduction to Big Data	3
CSCI-630	Foundations of Artificial Intelligence	3
CSCI-635	Introduction to Machine Learning	3
CSCI-642	Secure Coding	3
CSCI-711	Global Illumination	3
CSCI-788	Computer Science MS Project	3
CSCI-799	Computer Science Graduate Independent Study	6
	Computer Science Graduate Course	3
	Graduate Computer Science Foundations Course	3
Total Semester Credit Hours		**157**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students must complete one of the following lab sciences: University Physics II (PHYS-212); University Physics II: AP-C Electricity & Magnetism and University Physics II: AP-C Optics (PHYS-208/209); General Chemistry for Engineers and General & Analytical Chemistry I Lab (CHMG-131/145); General & Analytical Chemistry I and Lab (CHMG-141/145); General Biology I and Lab (BIOL-101/103); Explorations in Cellular Biology and Evolution and Lab (BIOG-101/103); General Biology II and Lab (BIOL-102/104); or Explorations in Animal and Plant Anatomy and Physiology and Lab (BIOG-102/104).

Software Engineering Design Electives

	Any course offered by Data Science (DSCI)
SWEN-220	Mathematical Models of Software
SWEN-342	Engineering of Concurrent and Distributed Software Systems
SWEN-343	Engineering of Enterprise Software Systems
SWEN-514	Engineering Cloud Software Systems
SWEN-549	Software Engineering Design Seminar
SWEN-563	Real-Time and Embedded Systems
SWEN-564	Modeling of Real-Time Systems
SWEN-565	Performance Engineering of Real-Time and Embedded Systems
SWEN-567	Hardware/Software Co-Design for Cryptographic Applications
SWEN-711	Engineering Self-Adaptive Software Systems
SWEN-712	Engineering Accessible Software
SWEN-745	Software Modeling
SWEN-746	Model-Driven Development
SWEN-755	Software Architecture
SWEN-789	Graduate Special Topics (Design Focused)

Software Engineering Process Electives

SWEN-350	Software Process and Product Quality
SWEN-352	Software Testing
SWEN-356	Trends in Software Development Processes
SWEN-559	Software Engineering Process Seminar
SWEN-722	Process Engineering
SWEN-732	Collaborative Software Development
SWEN-772	Software Quality Engineering
SWEN-789	Graduate Special Topics (Process Focused)

Engineering Electives

	Any software engineering (SWEN) elective course
	Any undergraduate level computer science (CSCI) course (exceptions apply)
	Any graduate level computer science (CSCI) course (exceptions apply)
	Any course offered through the College of Engineering (exceptions apply)
CSEC-202	Reverse Engineering Fundamentals
CSEC-362	Crypto and Authentication
CSEC-380	Principles of Web Application Security
CSEC-468	Risk Management for Information Security
CSEC-471	Penetration Testing Frameworks & Methodologies
CSEC-472	Authentication and Security Models
CSEC-604	Cryptography and Authentication
CSEC-731	Web Server and Application Security Audits
CSEC-733	Information Security Risk Management
CSEC-741	Internet of Things Security
EEET-261	Fundamentals of Audio Engineering
IGME-320	Game Design & Development II
ISTE-230	Introduction to Database and Data Modeling
ISTE-340	Client Programming
ISTE-341	Server Programming
ISTE-456	Mobile Application Development II
NSSA-290	Networking Essentials For Developers

Professional Electives

	Any Engineering elective
ACCT-110	Financial Accounting
BLEG-200	Business Law I
DECS-310	Operations Management
ECON-405	International Trade and Finance
ECON-430	Managerial Economics
FINC-220	Financial Management
FINC-425	Stock Market Algorithmic Trading
HRDE-386	Human Resources Development
INTB-225	Global Business Environment
MGMT-150	Business 1T: An Introduction to Business
MGMT-215	Organizational Behavior
MGMT-350	Entrepreneurship
MGMT-420	Managing Innovation and Technology
MGMT-470	Applied Entrepreneurship and Commercialization
MKTG-230	Principles of Marketing
SOIS-205	Practicing and Assessing Leadership

Math/Science Electives*

BIOG-101	Explorations in Cellular Biology and Evolution
BIOG-102	Explorations in Animal and Plant Anatomy and Physiology
BIOL-101	General Biology I
BIOL-102	General Biology II
BIOL-130	Introduction to Bioinformatics
CHMG-131	General Chemistry for Engineers
CHMG-141	General & Analytical Chemistry I
CHMG-142	General & Analytical Chemistry II
ECON-403	Econometrics I
ECON-404	Mathematical Methods: Economics
ENVS-101	Concepts of Environmental Science
ENVS-111	Soil Science
IMGS-111	Imaging Science Fundamentals
IMGS-112	Astronomical Imaging Fundamentals
IMGS-361	Image Processing and Computer Vision I
MATH-151H	Explorations of Place and Space: Connections and How they Determine Behavior
MATH-219	Multivariable Calculus
MATH-231	Differential Equations
MATH-251	Probability and Statistics I
MATH-311	Linear Optimization
MATH-351	Graph Theory
MATH-367	Codes and Ciphers
MEDG-101	Human Biology I
MEDG-102	Human Biology II
PHYS-213	Modern Physics I
PHYS-220	University Astronomy
STAT-257	Statistical Inference

Accreditation

The bachelor of science in software engineering program is accredited by the Engineering Accreditation Commission of ABET , https://www.abet.org.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are preferred.
- Computing electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in computer science, calculus, liberal arts; calculus-based physics, chemistry, or biology

Appropriate associate degree programs for transfer

AS degree in computer science, engineering science, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Web and Mobile Computing, BS

www.rit.edu/study/web-and-mobile-computing-bs

Dan Bogaard, Associate Professor
585-475-5231, Dan.Bogaard@rit.edu

Program overview

The web and mobile computing major is about combining people and technology to bring out the best in both. In this web development degree students learn how to integrate the back end code with the front end user experience, and are able to do it across several languages and platforms, to impact the app design process at all levels. Students are highly valuable to employers seeking today's most skilled application developers.

Web and mobile computing explores ubiquitous application development with a firm focus on the end user experience. Students have an interest in the technology of today (and tomorrow), but they're also interested in how people use that technology. The web and mobile computing major is about combining people and technology to bring out the best in both.

What truly sets our graduates apart is their ability to see the world through the eyes of the user. Creating an impactful App begins with solid code and good design, but understanding user expectations is the cornerstone of that process. In the Web and mobile computing major, students learn a user-centric approach to application creation. That, coupled with a robust developer skillset, enables them to produce applications that connect with multiple users across varied environments.

The curriculum is structured with this in mind. Students learn how to integrate the back end code with the front end UI, and will be able to do it across several languages and platforms. This comprehensive knowledge enables students to impact the App design process at all levels, making them incredibly valuable to employers seeking today's application developers. Students can also specialize on one of four areas, which provides students with the knowledge they need to pursue a professional or personal aspiration.

Plan of Study

A defining aspect of the web and mobile computing curriculum is the depth of study. Students learn a wide variety of languages and platforms so that they can meet the demands of industry and the public. For example, students don't just learn about web services, they learn how to use existing web services, how to create different types of web services, and how to do it in a variety of languages. And that's just part of what they'll learn in one of their courses (ISTE-341 Server Programming). After establishing this strong foundation, students can further their skills by choosing two of the following concentrations: web application development, mobile application development, geographic information systems, and wearable and ubiquitous development. The major also requires students to complete two blocks of cooperative education, which students may begin after completing their second year of study.

Concentrations

- Web Application Development: Want to build the next Ebay, Gmail, or Squarespace? Master the skills needed to push web apps in new directions.
- Database: Data is the lifeblood of modern business. Storage, integrity, access, speed, security – learn how to manage modern data in any environment.

- Mobile Application Development: Learn to write clean, efficient code in multiple languages and to design an impactful user interface on modern mobile platforms.
- Wearable and Ubiquitous Development: Smartwatches, the Internet of Things, and beyond – learn to integrate new and cutting edge tech into the modern world.
- Project Life Cycle: Understand how the entire process works, from initial client discussions to meeting deadlines, managing risks, and producing deliverables.

Global Opportunities

The web and mobile computing degree is offered at RIT's main campus, in Rochester, NY, and at RIT Croatia, which has campuses in Dubrovnik and Zagreb. Because the same curriculum is offered in all three locations, students may spend a semester studying abroad and immersing themselves in the Croatian culture without any negative impact on their schedule of studies. Furthermore, in their senior year all students take Senior Development Project I, II (ISTE-500, 501), a year-long course in which teams are composed of students from RIT's main campus and both RIT Croatia campuses. Whether students choose to study abroad or remain in Rochester, they will be working side-by-side with their peers from across the world.

Combined Accelerated Bachelor's/Master's Degree

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your computing co-ops will provide hands-on experience that enables you to apply your computing knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the web and mobile computing degree are required to complete two blocks of cooperative education experience.

Creative Industry Day

RIT's Office of Career Services and Cooperative Education hosts Creative Industry Day, which connects students majoring in art, design, film and animation, photography, and select computing majors with companies, organizations, creative agencies, design firms, and more. You'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Web and Mobile Computing, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
GCIS-123	Software Development and Problem Solving I (General Education)	
GCIS-124	Software Development and Problem Solving II (General Education)	
ISTE-140	Web & Mobile I	3
ISTE-144	Design for Developers	3
ISTE-230	Introduction to Database and Data Modeling	3
ISTE-240	Web & Mobile II	3
MATH-131	Discrete Mathematics (General Education – Mathematical Perspective A)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
Second Year		
ISTE-99	School of Information Second Year Seminar	0
ISTE-222	Applied Data Structures and Algorithms	3
ISTE-252	Foundations of Mobile Design	3
ISTE-260	Designing the User Experience	3
ISTE-330	Database Connectivity and Access	3
ISTE-340	Client Programming	3
ISTE-499	Undergraduate Co-op (summer)	0
MATH-161	Applied Calculus (General Education – Mathematical Perspective B)	4
NSSA-290	Networking Essentials for Developers	3
SWEN-383	Software Design Principles and Patterns	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
Third Year		
ISTE-341	Server Programming	3
ISTE-422	Application Development Practices	3
Choose one of the following:		0
ISTE-498	Undergraduate Creative, Innovative or Research Experience (summer)	
ISTE-499	Undergraduate Co-op (summer)	
	WMC Concentration Courses	6
	General Education – Immersion 1	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective‡	4
	Open Electives	9
Fourth Year		
ISTE-500	Senior Development Project I	3
ISTE-501	Senior Development Project II (WI-PR)	3
	WMC Concentration Courses	6
	General Education – Immersion 2, 3	6
	General Education – Scientific Principles Perspective	4
	Open Elective	3
	General Education – Electives	6
Total Semester Credit Hours		**126**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and the lab portions to fulfill the requirement.

Concentrations

Web Application Development

COURSE	
ISTE-442	Secure Web Application Development
ISTE-444	Web Server Development and Administration

Mobile Application Development

COURSE	
ISTE-454	Mobile Application Development I
ISTE-456	Mobile Application Development II

Wearable and Ubiquitous Development

COURSE	
ISTE-358	Foundations of Wearable & Ubiquitous Computing
ISTE-458	Advanced Topics in Wearable & Ubiquitous Computing

Project Life Cycle

COURSE	
NSSA-370	Project Management
ISTE-430	Information Requirements Modeling

Database

COURSE	
Choose two of the following:	
ISTE-432	Database Application Development
ISTE-438	Contemporary Databases
ISTE-470	Data Mining and Exploration

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are preferred.
- Computing electives are preferred

Transfer Admission

Transfer course recommendations without associate degree

Courses in computer science, calculus, liberal arts; calculus-based physics, chemistry, or biology

Appropriate associate degree programs for transfer

AS degree in computer science, engineering science, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Faculty

Matt Huenerfauth, MS, University of Delaware; MSc, University College Dublin (Ireland); Ph.D., University of Pennsylvania—Dean; Professor

Michael A. Yacci, BS, Ithaca College; MS, Rochester Institute of Technology; Ph.D., Syracuse University—Senior Associate Dean for Academic Affairs; Professor

Pengcheng Shi, BS, Shanghai Jiao Tong University (China); MS, M Phil, Ph.D., Yale University—Doctorate Program Director; Associate Dean for Research and Scholarship; Professor

Computer Science

Zack Butler, BS, Alfred University; Ph.D., Carnegie Mellon University—Interim Department Chair; Professor

Abeer Ahmad, BS, Lahore University; MS, Ph.D., Stony Brook University—Lecturer

Anthony Audi, BS Clarkson University; MS, Rochester Institute of Technology—Lecturer

Reynold Bailey, BS, Midwestern State University; MS, Ph.D., Washington University—Associate Undergraduate Program Director; Professor

Ivona Bezakova, BS, Comenius University (Slovakia); MS, Ph.D., University of Chicago—Professor

Hans-Peter Bischof, BS, MS, University of Ulm (Germany); Ph.D., University of Osnabrück (Germany)—Graduate Program Director; Professor

T.J. Borrelli, BS, St. John Fisher College; MS, Rochester Institute of Technology—Principle Lecturer

Jeremy Brown, BS, Rochester Institute of Technology; MS, Florida Institute of Technology—Lecturer

Ting Cao, BS, Changsha University of Science and Technology (China); MS, University of Edinburgh (United Kingdom)—Lecturer

Warren Carithers, BS, MS, University of Kansas—Associate Professor

Maria Cepeda, BS, Antonio Machado Education Institute (Spain); MS, Rochester Institute of Technology—Lecturer

Amal Chaaben, BS, MS, University of Sfax Higher Institute of Computer Science—Lecturer

Aaron Deever, BS, Pennsylvania State University; Ph.D., Cornell University—Senior Lecturer, Associate Undergraduate Program Director

Eduardo Coelho De Lima, MS, Ph.D., Rochester Institute of Technology—Lecturer

Matthew Fluet, BS, Harvey Mudd College; Ph.D., Cornell University—Associate Professor

Joe Geigel, BS, Manhattan College; MS, Stevens Institute of Technology; Ph.D., George Washington University—Professor

Edith Hemaspaandra, BS, MS, Ph.D., University of Amsterdam (Netherlands)—Professor

Christopher Homan, AB, Cornell University; MS, Ph.D , University of Rochester—Associate Professor

Ifeoluwatayo Ige, MS, Ph.D., University of Obadan (Nigeria)—Lecturer

Scott Johnson, BS, MS, Rochester Institute of Technology—Senior Lecturer

Thomas Kinsman, BS, University of Delaware; MS, Carnegie Mellon University; Ph.D., Rochester Institute of Technology—Senior Lecturer

Mohan Kumar, BE, Bangalore University (India); MTech, Ph.D., Indian Institute of Science (India)—Professor

Minseok Kwon, BS, MS, Seoul National University (South Korea); Ph.D., Purdue University—Associate Chair; Associate Professor

Xumin Liu, BE, Dalian University of Technology (China); ME, Jinan University (China); Ph.D., Virginia Polytechnic Institute and State University—Associate Professor

Michael Mior, BS, University of Ontario (Canada); MS, University of Toronto (Canada); Ph.D., University of Waterloo (Canada)—Assistant Professor

Arthur Nunes-Harwitt, BS, Brandeis University; MS, University of Pittsburgh; Ph.D., Rochester Institute of Technology—Senior Lecturer

Jansen Orfan, BS, Monmouth University; MS, University of Rochester—Lecturer

Alex Ororbia, BS, Bucknell University; MS, Ph.D., Pennsylvania State University—Assistant Professor

Stanislaw Radziszowski, MS, Ph.D., University of Warsaw (Poland)—Professor

Muhammed Mustapha Rafique, BS, National University of Computer and Emerging Sciences (Pakistan); MS, Ph.D. Virginia Tech University —Assistant Professor

Rajendra K. Raj, BS, Indian University of Technology (India); MS, University of Tennessee; Ph.D., University of Washington—Professor

Carlos Rivero Osuna, BS, MS, Ph.D., University of Seville (Spain)—Associate Professor

Leonid Reznik, Degree of Electronics, Leningrad Institute of Aeronautical Construction (Russia); MS, St. Petersburg Aircraft Academy (Russia); Ph.D., St. Petersburg Polytechnic Institute (Russia)—Professor

Sean Strout, BS, MS, Rochester Institute of Technology—Principal Lecturer

Phil White, BS, Clarkson College; MS, Rochester Institute of Technology—Principle Lecturer

Richard Zanibbi, BA, MS, Ph.D., Queens University (Canada)—Professor

Cybersecurity

Matthew Wright, BS, Harvey Mudd College; MS, Ph.D., University of Massachusetts—Department Chair; Professor

Hrishikesh Bhattacharya, BTech, Indian Institute of Technology (India); Ph.D., University of Texas at Austin—Assistant Professor

Ivan De Oliveira Nunes, BE, Federal University of Espirito Santo; MS, Federal University of Minas Gerais; Ph.D., University of California at Irvine—Assistant Professor

Ahmed Hamza, MS, Georgetown University; Ph.D., University of Portsmouth (United Kingdom)—Undergraduate Program Director; Lecturer

Yidan Hu, BE, MS, Hangzhou Dianzi University; Ph.D. University of Delaware—Assistant Professor

Daryl Johnson, BS, St. John Fisher College; MS, Rochester Institute of Technology—Associate Professor

Sumita Mishra, BS, Patna University (India); BS, Ph.D., State University of New York at Buffalo—Professor

Rob Olson, BS, MS, State University College at Fredonia; MS, Nova Southeastern University—Senior Lecturer

Yin Pan, BS, MS, Shanghai Normal University (China); MS, Ph.D., State University of New York at Binghamton—Professor

Gahyun Park, BS, Ewha Womans University (South Korea); MS, Ph.D., Purdue University—Senior Lecturer

Justin M. Pelletier, BS, Stonehill College; MBA, Rochester Institute of Technology; Ph.D., Capella University—Lecturer

Hanif Rahbari, BS, Sharif University of Technology (Iran); MS, Amirkabir University (Iran); Ph.D., University of Arizona—Assistant Professor

William Stackpole, BS, Roberts Wesleyan College; MS, Rochester Institute of Technology—Professor

Jonathan S. Weissman, BS, College of Staten Island; MA, Brooklyn College—Senior Lecturer

Bo Yuan, BS, MS Shanghai Normal University (China); Ph.D., State University of New York at Binghamton—Department Chair; Professor

School of Information

Eva Navarro López, BS, BE; ME; Ph.D., Universidad de Alicante (Spain); Ph.D., Universitat Politècnica de Catalunya (Spain)—School Director; Professor

Garret Arcoraci, State University College at Brockport—Lecturer

Catherine I. Beaton, BA, B.Ed., MITE, Dalhousie University (Canada)—Associate Professor

Yusuf Bilgic, BS, Marmara University; MS, Ph.D., Western Michigan University—Lecturer

Daniel S. Bogaard, BFA, Indiana University; MS, Rochester Institute of Technology—Undergraduate Program Director; Associate Professor

Charles B. Border, BA, State University College at Plattsburgh; MBA, Ph.D., State University of New York at Buffalo—Associate Professor

Stephen Cady, BA, Brooks Institute; BA, Antioch University; MFA, University of Illinois—Visiting Lecturer

Bryan French, BA, State University College at Potsdam; MS, Rochester Institute of Technology—Senior Lecturer

Dean Ganskop, BS, MS, Rochester Institute of Technology—Lecturer

Erik Golen, BS, Ph.D., Rochester Institute of Technology—Lecturer

James Habermas, BA, MS, State University College at Brockport—Visiting Lecturer

Bruce H. Hartpence, BS, MS, Rochester Institute of Technology—Professor

Lawrence Hill, BS, MS, Rochester Institute of Technology—Networking and Systems Administration Program Coordinator; Associate Professor

Edward Holden, BA, State University College at Oswego; MBA, Rochester Institute of Technology—Associate Professor

Jai Kang, BS, Seoul National University (South Korea); MA, Kent State University; MS, Georgia Institute of Technology; Ph. D., State University of New York at Buffalo—Associate Professor

Jeffrey A. Lasky, BBA, City College of New York; MBA, City University of New York; MS, University of Minnesota— Professor Emeritus

Sharon P. Mason, BS, Ithaca College; MS, Rochester Institute of Technology; Ph.D., University of Buffalo—Professor

Tae (Tom) Oh, BS, Texas Tech University; MS, Ph.D., Southern Methodist University—Professor

Sylvia Perez-Hardy, BS, MBA, Cornell University—Associate Professor

Nirmala Shenoy, BE, ME, University of Madras (India); Ph.D., University of Bremen (Germany)—Professor

Kristen Shinohara, BS, University of Puget Sound; MS, University of Washington-Tacoma; Ph.D., University of Washington-Seattle—Assistant Professor

Elissa M. Weeden, BS, MS, Rochester Institute of Technology; Ed.S., Ph.D., Nova Southeastern University—Associate Professor—Associate Professor

Qi Yu, BE, Zhejiang University (China); MS, National University of Singapore (Singapore); Ph.D., Virginia Polytechnic Institute and State University—Professor

Interactive Games and Media

David I. Schwartz, BS, MS, Ph.D., University at Buffalo—Director; Associate Professor

Jake Adams, BFA, Maryland Institute College of Art; MS, University of Edinburgh (United Kingdom)—Lecturer

Eric Baker, BS, MS, Rochester Institute of Technology—Lecturer

Jessica Bayliss, BS, California State University, Fresno; MS, Ph.D., University of Rochester—Professor

John A. Biles, BA, MS, University of Kansas—Professor Emeritus

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Stephen Jacobs, BA, MA, New School for Social Research—Professor

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Elouise Oyzon, BFA, MFA, Rochester Institute of Technology—Associate Professor; Undergraduate Program Director

Konstantinos Papangelis, BS, University of Huddersfield (United Kingdom); MS, University of Lancaster (United Kingdom); Ph.D., University of Aberdeen (United Kingdom); Fellow of the Royal Society of the Arts—Assistant Professor

Chao Peng, B.Arch., Hebei University of Engineering (China); MFA, University of Alaska Fairbanks; Ph.D., Virginia Polytechnic Institute and State University—Associate Professor

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David Simkins, BA, MS, Ph.D., University of Wisconsin-Madison—Associate Professor

Travis Stodter, BS, MS, Pennsylvania State University—Lecturer

Brian Tomaszewski, BA, University of Albany; MA, University at Buffalo; Ph.D., Pennsylvania State University—Professor

Andrew Wheeland, MS, Rochester Institute of Technology—Lecturer

Austin Willoughby, BS, MS, Rochester Institute of Technology—Lecturer

Software Engineering

Naveen Sharma, MS, Indian Institutes of Science (India); Ph.D., Kent State University—Department Chair; Professor

Bruce Herring, BS, MS Florida State University—Senior Lecturer

Larry Kiser, BS, Roberts Wesleyan College; MS, Rochester Institute of Technology—Senior Lecturer

Samuel Malachowsky, BBA, State University of New York at Buffalo; MBA, Medaille College—Senior Lecturer

Kenn Martinez, BS, Syracuse University; MS, Rensselaer Polytechnic Institute—Senior Lecturer

Andy Meneely, BA, Calvin College; Ph.D., North Carolina Sate University—Undergraduate Program Director; Associate Professor

Kal Rabb, BS, University of Rochester; MS, Rochester Institute of Technology—Lecturer

Sophia Sandhu, BS, Panjab Technical University; MS, University of Toledo—Lecturer

Bob St. Jacques, BS, MS, Rochester Institute of Technology—Senior Lecturer

AbdulMutalib (Abdul) Wahaishi, BS, University of Tripoli; MS, Ph.D., University of Western Ontario—Visiting Lecturer

Computing and Information Sciences

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Rui Li, BS, Harbin Institute of Technology (China); MS, Tianjin University of Technology (China); Ph.D., Rochester Institute of Technology—Assistant Professor

Linwei Wang, BS, Zhejiang University (China); M.Phil., Hong Kong University of Science and Technology (Hong Kong); Ph.D., Rochester Institute of Technology—Professor

Haibo Yang, BS, MS, Lanzhou University (China); Ph.D., Iowa State University—Assistant Professor

Kate Gleason College of Engineering

Doreen Edwards, Dean
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Combined Accelerated Bachelor's/Master's Degree available.

Accreditation

All eligible majors have received national accreditation by ABET (Accreditation Board of Engineering and Technology), which is a prerequisite for licensure as a professional engineer in many states. In their final semester of study, graduating seniors in ABET approved majors are eligible to sit for the NCEES Fundamentals of Engineering (FE) section of the New York State Professional Engineering examination, which is the first step in the process for licensure as a Professional Engineer (PE).

The majors offered by the Kate Gleason College of Engineering prepare students for careers in industry or for graduate study in engineering and related fields. Students develop a strong intellectual foundation for lifelong learning through a balance of course work in the liberal arts, physical sciences, and professional studies. All students participate in a five-year program that integrates a comprehensive four-year academic major with one year of cooperative education experience. After the second year of study, students typically alternate study on campus with cooperative education.

Please visit the college's website–**www.rit.edu/engineering**–for in depth information on academics, admissions requirements, faculty, facilities, financial aid and scholarships, research initiatives, advising, and more.

Biomedical Engineering, BS

www.rit.edu/study/biomedical-engineering-bs
Jennifer Bailey, Principal Lecturer
585-475-4964, jlbbme@rit.edu

Program overview

Improving the health and well-being of others is the emphasis of this dynamic biomedical engineering BS. Biomedical engineering leverages the vast knowledge base of engineering, biology, and medicine to solve problems focused on health care and the human body. Biomedical engineers:

- Design instruments, devices, and software
- Bring together knowledge from many technical sources to develop new medical products, procedures, and pharmaceuticals
- Conduct research needed to solve clinical problems

Biomedical Engineering Courses

RIT's biomedical engineering BS is a five-year program consisting of the following:

- Biomedical Engineering Core Courses: A core set of courses in science, technology, engineering, and mathematics (STEM) give you the ability to apply principles of science and engineering to analyze, model, design, and realize biomedical devices, systems, components, and processes. You will learn to solve biomedical engineering problems including those associated with the interaction between living and non-living systems as well as make measurements on, and interpret data from, living systems.
- Professional Technical Electives: Two free electives allow you to choose courses from any college in the university. In the fourth or fifth year of the program, students choose two technical electives specifically related to some aspect of biomedical engineering, such as biomechanics, instrumentation and imaging, or tissue engineering.
- Cooperative Education: One year of cooperative education experience provides you with hands-on experience working in industry. (See Cooperative Education below.)
- Liberal Arts Courses: Courses that include writing, communications, and the humanities and social sciences comprise liberal arts courses you will complete as part of your degree. A three-course immersion is also required. The immersion can enhance your biomedical engineering studies or be a topic that explores a personal interest.
- Free Electives: Chosen based on your interests, these free electives provide you with the opportunity to select additional course work to enhance a personal or professional interest.
- Multidisciplinary Senior Design: This two-course multidisciplinary senior design experience integrates engineering theory, principles, and processes within a collaborative environment that bridges engineering disciplines. Explore projects and innovations developed in multidisciplinary senior design.

Learn more about the Student Learning Outcomes and Program Educational Objectives for the biomedical engineering BS degree.

What's the Difference Between Engineering and Engineering Technology?

It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering or engineering technology is more about identifying what you like to do and how you like to do it.

Furthering Your Education in Biomedical Engineering

Students enrolled in the biomedical engineering undergraduate program may choose to participate in one of our pre-med or pre-vet advising programs:

- Premedical and Health Professions Advisory Program offers guidance and advice on becoming a competitive applicant to admission into medical schools and graduate programs in the health professions.
- Pre-Vet Advising Program helps you maximize your candidacy for admission to veterinary schools.

RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years, giving you a competitive advantage.

- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

The biomedical engineering degree requires students to complete four blocks (roughly 48 weeks) of cooperative education.

Curriculum

Biomedical Engineering, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIME-181	Intro to Biomedical Engineering	1
BIME-191	Introduction to Programming for Biomedical Engineers	3
CHMG-141	General & Analytical Chemistry I (General Education)	3
CHMG-142	General & Analytical Chemistry II (General Education)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education)	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (eneral Education – Scientific Principles Perspective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – First Year Writing (WI)	3
	General Education – Elective	3
Second Year		
BIME-99	BME Career Seminar	0
BIME-200	Introductory Musculoskeletal Biomechanics	3
BIME-250	Biosystems Process Analysis	3
BIME-320	Fluid Mechanics	3
BIME-370	Introduction to Biomaterials Science	3
BIME-391	Biomechanics and Biomaterials Lab	2
BIOG-140	Cell and Molecular Biology for Engineers I (General Education)	3
BIOG-240	Cell and Molecular Biology for Engineers II (General Education)	3
EGEN-099	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus (General Education)	4
MATH-231	Differential Equations (General Education)	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Ethical Perspective	3
Third Year		
BIME-360	Biomedical Signal Analysis	3
BIME-407	Medical Device Design	3
BIME-410	Systems Physiology I	3
BIME-499	Co-op (fall and summer)	0
MATH-251	Probability and Statistics for Engineers I (General Education)	3
	General Education – Global Perspective	3
Fourth Year		
BIME-411	Systems Physiology II (WI-PR)	3
BIME-450	Numerical Analysis of Complex Biosystems	3
BIME-491	Quantitative Physiological Signal Analysis Lab	1
BIME-499	Co-op (spring and summer)	0
ISEE-325	Engineering Statistics and Design of Experiments	3
	General Education – Immersion	3
	Open Elective	3
Fifth Year		
BIME-460	Dynamics and Control of Biomedical Systems	3
BIME-492	Systems Physiology Control and Dynamics Lab	1
BIME-497	Multidisciplinary Senior Design I	3
BIME-498	Multidisciplinary Senior Design II	3
	Professional Electives	6
	Open Electives	6
	General Education – Social Perspective	3
	General Education – Immersion 2, 3	6
Total Semester Credit Hours		**129**

Please see General Education Curriculum (GE) for more information..
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Biomedical Engineering BS/Science, Technology and Public Policy MS

Throughout history, technology has been a major driver of social, political, and economic change. Societies around the globe employ public policies to solve problems and achieve their social, economic, and environmental objectives. The spheres of public policy and technology overlap as society is challenged to consider not only the role of new technologies in its quest for improved quality of life, but also how policies affect the development, emergence, and choice of new technologies. Because of the role engineers play in creating new technology, they increasingly have an important role in helping to shape public policy. Moreover, policies affecting how we as a society live and work—such as environmental, industrial, energy, and national security policy, to name a few—demand that engineers be prepared to integrate policy issues into their engineering practice.

Biomedical engineering students may choose to pursue an accelerated dual degree in which they may complete the BS in biomedical engineering and an MS in science, technology and public policy in approximately five years. Many biomedical engineers combine their technical knowledge with the policy skills needed to analyze and advocate for policy change in both private and public organizations. The interdisciplinary nature of the program, in conjunction with the quantitative and qualitative approaches taken to understand and analyze policy, will contribute to your ability to gain exciting leadership roles in a range of the engineering fields.

Biomedical Engineering, BS degree/ Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIME-181	Intro to Biomedical Engineering	1
BIME-191	Introduction to Programming for Biomedical Engineers	3
CHMG-141	General & Analytical Chemistry I	3
CHMG-142	General & Analytical Chemistry II	3
CHMG-145	General & Analytical Chemistry I Lab	1
CHMG-146	General & Analytical Chemistry II Lab	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Elective	3
	General Education – First Year Writing (WI)	3
Second Year		
BIME-099	BME Career Seminar	0
BIME-200	Introductory Musculoskeletal Biomechanics	3
BIME-250	Biosystems Process Analysis	3
BIME-320	Fluid Mechanics	3
BIME-370	Introduction to Biomaterials Science	3
BIME-391	Biomechanics and Biomaterials Lab	2
BIOG-140	Cell and Molecular Biology for Engineers I	3
BIOG-240	Cell and Molecular Biology for Engineers II	3
EGEN-099	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus	4
MATH-231	Differential Equations	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Ethical Perspective	3
Third Year		
BIME-360	Biomedical Signal Analysis	3
BIME-407	Medical Device Design	3
BIME-410	Quantitative Physiology	3
BIME-499	Co-op (fall, summer)	0
MATH-251	Probability and Statistics for Engineers I	3
	General Education – Global Perspective	3
Fourth Year		
BIME-411	Quantitative Systems Physiology	3
BIME-450	Numerical Analysis of Complex Biosystems	3
BIME-491	Quantitative Physiological Signal Analysis Lab	1
BIME-499	Co-op (summer)	0
ISEE-325	Engineering Statistics and Design of Experiments	3
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	BIME Professional Elective	3
	General Education – Immersion 1,2	6
	Open Electives	3
	General Education – Social Perspective	3
Fifth Year		
BIME-460	Dynamics and Control of Biomedical Systems	3
BIME-492	Systems Physiology Control and Dynamics Lab	1
BIME-497	Multidisciplinary Senior Design I	3
BIME-498	Multidisciplinary Senior Design II (WI-PR)	3
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
	BIME – Professional Elective	3
	General Education - Immersion 3	3
	Graduate Policy Elective	3
	Open Elective	3
Choose one of the following:		6
PUBL-785	Capstone Experience	
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam plus 2 Graduate Electives	
Total Semester Credit Hours		**150**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The BS program in biomedical engineering is accredited by the Engineering Accreditation Commission of ABET. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of math is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science. Biology, chemistry, and physics are required.

Transfer Admission

Transfer course recommendations without associate degree

Pre-engineering courses such as calculus, calculus-based physics, chemistry, and liberal arts.

Appropriate associate degree programs for transfer

AS degree in engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Chemical Engineering, BS

www.rit.edu/study/chemical-engineering-bs
Brian Landi, Professor
585-475-4726, bjlsps@rit.edu

Program overview

RIT's degree in chemical engineering is a comprehensive program of study that prepares you to advance nano-scale composites, semiconductors, pharmaceuticals, plastics, fibers, metals, and ceramics and to develop alternative energy systems, biomedical materials and therapies, and strategies that minimize the environmental impact of technological advancements.

Chemical engineering applies the core scientific disciplines of chemistry, physics, biology, and mathematics to transform raw materials or chemicals into more useful or valuable forms, invariably in processes that involve chemical change. All engineers employ mathematics, physics, and engineering to overcome technical problems in a safe and economical fashion. A chemical engineer provides the critical level of expertise needed to solve problems in which chemical specificity and change have particular relevance. They not only create new, more effective ways to manufacture chemicals, they also work collaboratively with chemists to pioneer the development of high-tech materials for specialized applications. Well-known contributions include the development and commercialization of synthetic rubber, synthetic fiber, pharmaceuticals, and plastics. Chemical engineers contribute significantly to advances in the food industry, alternative energy systems, semiconductor manufacturing, and environmental modeling and remediation. A special focus on process engineering cultivates a systems perspective that makes chemical engineers extremely versatile and capable of handling a wide spectrum of technical problems. Students develop a firm and practical grasp of engineering principles and the underlying science associated with traditional and emerging chemical engineering applications.

RIT's Bachelor's in Chemical Engineering

The core curriculum of RIT's chemical engineering BS degree provides you with a solid foundation in engineering principles and their underlying science.

You will choose professional technical electives from within the major, as well as from a department-approved list of engineering courses offered throughout the Kate Gleason College of Engineering. These electives provide an in-depth examination of the chemical engineering field or provide breadth in other engineering disciplines. Mathematics and science courses, free electives, and liberal arts courses round out the curriculum.

Learn more about the Student Learning Outcomes and Program Educational Objectives for the chemical engineering BS degree.

How is Chemical Engineering Different from Chemistry?

Virtually every aspect of a modern industrial economy is critically dependent upon chemical engineering for manufacturing bulk and specialty chemicals and high-tech materials needed to create a limitless array of value-added products. Chemical engineering applies the core scientific disciplines of chemistry, physics, biology, and mathematics to transform raw materials or chemicals into more useful or valuable forms, invariably in processes that involve chemical change. They work in multidisciplinary teams to create novel materials that are at the heart of virtually every product and service that enhances our quality of life. Examples include nano-scale composites, pharmaceuticals, plastics, fibers, metals, and ceramics. Key applications include the development of alternative energy systems, biomedical materials and therapies, and strategies to minimize the environmental impact of technological advancements.

The line between the functions of chemists and chemical engineers can be blurred, but a general distinction can be made between the function of the two disciplines. Perhaps the clearest distinction can be made in the area of chemical transformation. Typically, chemists develop new molecules via chemical reaction, examine the underlying mechanisms involved, and make precise measurements of both physical and organic chemistry parameters on a bench scale in small volumes. Chemical engineers utilize the work of chemists to build processes to manufacture and purify chemicals and new materials on a larger scale. Using their knowledge of scientific principles (physical and organic chemistry integrated with physics, mathematics, and biology) and design constraints (such as economics, environmental requirements) chemical engineers develop processes to manufacture raw materials with desired purity on a scale that meets the demands of virtually every industry in our modern society.

Hands-On Experience in Chemical Engineering

As a student in the chemical engineering BS you will gain valuable hands-on experience through specific program requirements, including a capstone experience that features two dynamic courses:

- Design with Constraint is taught in a workshop structure with lectures and in-class applications of concepts. You will examine typical constraints on design and their integration with technology.
- Advanced Design Capstone requires you to work in teams to design and simulate a realistic chemical manufacturing plant, drawing upon and integrating the knowledge you have acquired from all of your core chemical engineering courses, electives, and co-op experiences completed over the previous five years of study.

Furthering Your Education in Chemical Engineering

Your degree in chemical engineering opens doors to a variety of options when it comes to furthering their education:

- Premedical and Health Professions Advisory Program: An advising program designed to help you prepare a competitive application for admission into medical schools and graduate programs in the health professions.
- Pre-Vet Advising Program: An advising program to help you maximize your candidacy for admission to veterinary schools.

RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years, giving you a competitive advantage.

- BS in Chemical Engineering/MS in Science, Technology, and Public Policy: Throughout history, technology has been a major driver of social, political, and economic change. Societies around the globe employ public policies to solve problems and achieve their social, economic, and environmental objectives. The spheres of public policy and technology overlap as society is challenged to consider not only the role of new technologies in its quest for improved quality of life, but also how policies affect the development, emergence, and choice of new technologies. Because of the role engineers play in creating new technology, they increasingly have an important role in helping to shape public policy. Moreover, policies affecting how we as a society

live and work—such as environmental, industrial, energy, and national security policy, to name a few—demand that engineers be prepared to integrate policy issues into their engineering practice.
- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to enroll in the +1 MBA program by adding an MBA to their bachelor's degree after their first year of study.

What's the Difference Between Engineering and Engineering Technology?

It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing the right major in engineering or engineering technology is more about identifying what you like to do and how you like to do it.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the chemical engineering degree are required to complete four blocks (48 weeks) of cooperative education. This work experience, coupled with the professional networks created by our students and alumni, often translates into job opportunities after graduation. Additionally, for those students who develop an interest in research and demonstrate aptitude in the classroom, a limited number of co-op opportunities are possible in which students will work alongside professors as they conduct research in the chemical engineering field.

Curriculum

Chemical Engineering, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHME-181	Chemical Engineering Insights I	1
CHME-182	Chemical Engineering Insights II	1
CHMG-141	General & Analytical Chemistry I (General Education)	3
CHMG-142	General & Analytical Chemistry II (General Education)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education)	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
Second Year		
CHME-230	Chemical Process Analysis	3
CHME-310	Applied Thermodynamics	3
CHME-320	Continuum Mechanics I	3
CHME-391	Chemical Engineering Principles Lab	2
CHMO-231	Organic Chemistry I (General Education)	3
CHMO-235	Organic Chemistry Lab I (General Education)	1
EGEN-099	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus (General Education)	4
MATH-231	Differential Equations (General Education)	3
STAT-205	Applied Statistics (General Education)	3
	General Education – Global Perspective	3
	Open Elective	3
Third Year		
CHMA-231	Chemical Instrumental Analysis for Engineers (General Education)	3
CHME-301	Analytical Techniques for Chemical Engineering I	3
CHME-321	Continuum Mechanics II	3
CHME-330	Mass Transfer Operations	3
CHME-499	Co-op (fall and summer)	0
	General Education – Social Perspective	3
	General Education – Immersion	3
Fourth Year		
CHME-302	Analytical Techniques for Chemical Engineering II	3
CHME-340	Reaction Engineering	4
CHME-350	Multiple Scale Material Science	3
CHME-491	Chemical Engineering Processes Lab (WI-PR)	2
CHME-499	Co-op (spring and summer)	0
	General Education – Immersion 2, 3	6
Fifth Year		
CHME-401	System Dynamics and Control	3
CHME-451	Analysis of MultiScale Processes	3
CHME-490	Design with Constraint	3
CHME-492	Advanced Design Capstone	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	Professional Technical Electives	9
	Open Electives	6
Total Semester Credit Hours		**129**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

BS in Chemical Engineering/MS in Science, Technology, and Public Policy

Throughout history, technology has been a major driver of social, political, and economic change. Societies around the globe employ public policies to solve problems and achieve their social, economic, and environmental objectives. The spheres of public policy and technology overlap as society is challenged to consider not only the role of new technologies in its quest for improved quality of life, but also how policies affect the development, emergence, and choice of new technologies. Because of the role engineers play in creating new technology, they increasingly have an important role in helping to shape public policy. Moreover, policies affecting how we as a society live and work—such as environmental, industrial, energy, and national security policy, to name a few—demand that engineers be prepared to integrate policy issues into their engineering practice.

This accelerated dual degree option allows students to earn a BS in chemical engineering and an MS in science, technology, and public policy in approximately five years. The program is a natural fit that enables qualified students enrolled in chemical engineering, who also have an interested in public policy issues, with an opportunity to pursue a graduate level degree in a field that combines their engineering and public policy interests.

Chemical Engineering, BS degree/ Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHME-181	Chemical Engineering Insights I	1
CHME-182	Chemical Engineering Insights II	1
CHMG-141	General & Analytical Chemistry I	3
CHMG-142	General & Analytical Chemistry II	3
CHMG-145	General & Analytical Chemistry I Lab	1
CHMG-146	General & Analytical Chemistry II Lab	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
Second Year		
CHME-230	Chemical Process Analysis	3
CHME-310	Applied Thermodynamics	3
CHME-320	Continuum Mechanics I	3
CHME-391	Chemical Engineering Principles Lab	2
CHMO-231	Organic Chemistry I	3
CHMO-235	Organic Chemistry Lab I	1
EGEN-099	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus	4
MATH-231	Differential Equations	3
STAT-205	Applied Statistics	3
	General Education – Global Perspective	3
	Open Elective	3
Third Year		
CHMA-231	Chemical Instrumental Analysis for Engineers	3
CHME-301	Analytical Techniques for Chemical Engineering I	3
CHME-321	Continuum Mechanics II	3
CHME-330	Mass Transfer Operations	3
CHME-499	Co-op (fall)	0
	General Education – Social Perspective	3
	General Education – Immersion 1	3
Fourth Year		
CHME-302	Analytical Techniques for Chemical Engineering II	3
CHME-340	Reaction Engineering	4
CHME-350	Multiple Scale Material Science	3
CHME-491	Chemical Engineering Processes Lab (WI-PR)	2
CHME-499	Co-op (summer)	0
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	General Education – Immersion 1, 2	6
	Professional/Technical/STPP Elective	3
Fifth Year		
CHME-401	System Dynamics and Control	3
CHME-451	Analysis of MultiScale Processes	3
CHME-490	Design with Constraint	3
CHME-492	Advanced Design Capstone	3
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
	Professional/Technical/STPP Electives	6
	Open Electives	3
	General Education – Immersion 3	3
Choose one of the following:		6
PUBL-785	Capstone Experience	
PUBL-799	Public Policy Thesis	
PUBL-798	Comprehensive Exam plus 2 Graduate Electives	
Total Semester Credit Hours		**150**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

BS in Chemical Engineering/ MS in Materials Science and Engineering

In research and development, chemical engineers not only create new, more effective ways to manufacture chemicals, but also work collaboratively with chemists and material scientists to pioneer the development of new high-tech materials for specialized applications. High performance materials are needed across all industry sectors including aerospace, automotive, biomedical, electronic, environmental, space, and military applications.

This accelerated dual degree option allows students to earn a BS in chemical engineering and an MS in materials science in approximately five years. This option educates students to not only be able to scale up and manufacture materials (by virtue of their BS degree in chemical engineering), but also manipulate novel soft and hard materials on the bench scale as they are developed. Upon graduation, BS/MS students will be immediate contributors to the material science industries and will be well prepared for employment opportunities ranging from research and development to manufacturing.

Chemical Engineering, BS degree/ Materials Science and Engineering (thesis option), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHME-181	Chemical Engineering Insights I	1
CHME-182	Chemical Engineering Insights II	1
CHMG-141	General & Analytical Chemistry I (General Education)	3
CHMG-142	General & Analytical Chemistry II (General Education)	3
CHMG-145	General & Analytical Chemistry Lab I (General Education)	1
CHMG-146	General & Analytical Chemistry Lab II (General Education)	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective A)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
CHME-230	Chemical Process Analysis	3
CHME-310	Applied Thermodynamics	3
CHME-320	Continuum Mechanics I	3
CHME-391	Chemical Engineering Principles Lab	2
CHMO-231	Organic Chemistry I (General Education)	3
CHMO-235	Organic Chemistry Lab I (General Education)	1
EGEN-099	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus (General Education)	4
MATH-231	Differential Equations (General Education)	3
STAT-205	Applied Statistics (General Education)	3
	General Education – Global Perspective	3
	Open Elective	3
Third Year		
CHMA-231	Chemical Instrumental Analysis for Engineers	3
CHME-301	Analytical Techniques for Chemical Engineering I	3
CHME-321	Continuum Mechanics II	3
CHME-330	Mass Transfer Operations	3
CHME-499	Co-op (fall)	0
	General Education – Social Perspective	3
	General Education – Immersion 1	3
Fourth Year		
CHME-302	Analytical Techniques for Chemical Engineering II	3
CHME-340	Reaction Engineering	4
CHME-350	Multiple Scale Material Science	3
CHME-491	Chemical Engineering Processes Lab (WI-PR)	2
MTSE-705	Experimental Techniques	3
MTSE-790	Research & Thesis	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Immersion 2, 3	6
	Graduate Elective	3
	Professional Technical Electives (MTSE)	9
Fifth Year		
CHME-401	System Dynamics and Control	3
CHME-451	Analysis of MultiScale Processes	3
CHME-490	Design With Constraint	3
CHME-492	Advanced Design Capstone	3
MTSE-601	Materials Science	3
MTSE-704	Theoretical Methods in Materials Science and Engineering	3
MTSE-777	Graduate Project	3
	Professional Technical Elective (MTSE)	3
	Graduate Elective	3
	Open Electives	6
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.

* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Chemical Engineering, BS degree/ Materials Science and Engineering (project option), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHME-181	Chemical Engineering Insights I	1
CHME-182	Chemical Engineering Insights II	1
CHMG-141	General Education – Elective: General & Analytical Chemistry I	3
CHMG-142	General Education – Elective: General & Analytical Chemistry II	3
CHMG-145	General Education – Elective: General & Analytical Chemistry Lab I	1
CHMG-146	General Education – Elective: General & Analytical Chemistry Lab II	1
MATH-181	General Education – Mathematical Perspective A: Project-Based Calculus I	4
MATH-182	General Education – Mathematical Perspective B: Project-Based Calculus II	4
PHYS-211	General Education – Scientific Principles Perspective University Physics I	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
CHME-230	Chemical Process Analysis	3
CHME-310	Applied Thermodynamics	3
CHME-320	Continuum Mechanics I	3
CHME-391	Chemical Engineering Principles Lab	2
CHMO-231	General Education – Elective: Organic Chemistry I	3
CHMO-235	General Education – Elective: Organic Chemistry Lab I	1
EGEN-099	Engineering Co-op Preparation	0
MATH-221	General Education – Elective: Multivariable and Vector Calculus	4
MATH-231	General Education – Elective: Differential Equations	3
STAT-205	General Education – Elective: Applied Statistics	3
	General Education – Global Perspective	3
	Open Elective	3
Third Year		
CHMA-231	Chemical Instrumental Analysis for Engineers	3
CHME-301	Analytical Techniques for Chemical Engineering I	3
CHME-321	Continuum Mechanics II	3
CHME-330	Mass Transfer Operations	3
CHME-499	Co-op (fall, summer)	0
	General Education – Social Perspective	3
	General Education – Immersion 1	3
Fourth Year		
CHME-302	Analytical Techniques for Chemical Engineering II	3
CHME-340	Reaction Engineering	4
CHME-350	Multiple Scale Material Science	3
CHME-491	Chemical Engineering Processes Lab (WI-PR)	2
MTSE-705	Experimental Techniques	3
PHYS-212	General Education – Natural Science Inquiry Perspective: University Physics II	4
	General Education – Immersion 2, 3	6
	Professional Technical Electives (MTSE)	9
Fifth Year		
CHME-401	System Dynamics and Control	3
CHME-451	Analysis of MultiScale Processes	3
CHME-490	Design With Constraint	3
CHME-492	Advanced Design Capstone	3
MTSE-601	Materials Science	3
MTSE-704	Theoretical Methods in Materials Science and Engineering	3
MTSE-777	Graduate Project	3
	Professional Technical Electives (MTSE)	9
	Open Electives	6
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The BS program in chemical engineering is accredited by the Engineering Accreditation Commission of ABET. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of math is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science. Chemistry and physics are required.

Transfer Admission

Transfer course recommendations without associate degree

Pre-engineering courses such as calculus, calculus-based physics, chemistry, and liberal arts.

Appropriate associate degree programs for transfer

AS degree in engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Computer Engineering, BS

www.rit.edu/study/computer-engineering-bs
Roy Melton, Principal Lecturer
585-475-7698, Roy.Melton@mail.rit.edu

Program overview

RIT's Bachelor of Science in Computer Engineering

In the computer industry, there is a great demand for computer engineers who can do it all—from designing high performance computer hardware components and software to developing next-generation intelligent, resilient, and sustainable products and appliances that contain embedded systems.

Courses in Computer Engineering

RIT's BS in computer engineering begins with the fundamental math, science, and technology courses that are essential to the curriculum. Emphasis is placed on selected areas of computer science, software engineering, and electrical engineering, including:

- Data structures
- Object-oriented programming languages
- Circuits
- Electronics
- Principles of software engineering

Upper-level computer engineering courses prepare you to integrate hardware and software by formulating complete system solutions. This is achieved through courses in:

- Computer architecture
- Digital systems
- Interfacing
- Computer networks
- Digital signal processing

Concentration areas provide you with an opportunity to gain additional in-depth knowledge in an area of particular interest within computer engineering. If you're interested in conducting research, we highly encourage you to choose a concentration in an area of research that interests you and corresponds to the research initiatives of our engineering faculty. Concentrations are available in:

- Software
- High-performance computing
- Computer architecture
- Integrated circuits and systems
- Networks and security
- Computer vision and machine intelligence
- Signal processing, control, and embedded systems

Learn more about the Student Learning Outcomes and Program Educational Objectives for the computer engineering bachelor's degree.

Hands-On Experience in Computer Engineering

In RIT's BS in computer engineering you will gain valuable hands-on experience through a senior design capstone experience, undergraduate research, and more.

Senior Design Capstone Experience: Computer engineering students complete a senior project that consists of a two-semester capstone design experience. You will work in multidisciplinary design project teams of four to seven students from different engineering majors, including biomedical, computer, electrical, industrial, and mechanical engineering. Teams are assigned to projects before the start of the first course. Most projects are initiated by industry sponsors, community partners, or faculty members; however, students may also propose their own project ideas. While completing your senior design project, you will develop engineering management and project organization skills, learn to communicate your ideas effectively within a multidisciplinary team, and present your project and ideas to a diverse audience of students, faculty, and industrial partners.

Furthering Your Education in Computer Engineering

Combined Accelerated Bachelor's/Master's Degrees: RIT offers Combined Accelerated Bachelor's/Master's Degrees that enable you to earn both a bachelor's and a master's degree in as little as five years, giving you a competitive advantage.

- Computer Engineering BS/MS: In this combined dual degree option you'll gain a foundation in computer engineering in the bachelor's degree program while the computer engineering master's focuses on the design and development of computer and computer-integrated systems, with consideration to engineering factors as function, performance, security, and sustainability.
- +1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS in computer engineering as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. Learn more about the +1 MBA Early Acceptance Pathway.
- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn more about the +1 MBA.

What's The Difference Between Engineering and Engineering Technology?

It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering or engineering technology is more about identifying what you like to do and how you like to do it.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

The computer engineering degree requires students to complete four blocks (48 weeks) of cooperative education experience. After completing the first two years of course work, you'll spend the next two years alternating course work on campus with cooperative education experience. This employment not only adds real experience to your resume, but prepares you for more sophisticated academic work. Students have completed co-ops at companies as Motorola, Intel, Advanced Micro Devices, IBM, Hewlett Packard, Eastman Kodak Company, and for the federal government, as well as a host of smaller companies. Co-op has taken our students from the high-tech corridors of New England and California to

businesses close to their hometowns. Students have worked on product development teams for companies like IBM, Intel, Hewlett-Packard, Lucent Technologies, and Kodak. They have also worked on software projects for smaller companies and the government.

During co-op experiences, computer engineering students have been on product development teams for new computers and electronic imaging systems as well as a variety of large software projects for industry and government.

Curriculum

Computer Engineering, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CMPE-110	Introduction to Computer Engineering	1
CMPE-160	Digital System Design I	3
CSCI-141	Computer Science I (General Education)	4
CSCI-142	Computer Science II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
Second Year		
CMPE-250	Assembly and Embedded Programming	3
CMPE-260	Digital System Design II	4
EEEE-281	Circuits I	3
EGEN-99	Engineering Co-op Preparation	0
MATH-190	Discrete Mathematics for Computing (General Education)	3
MATH-219	Multivariable Calculus (General Education)	3
MATH-231	Differential Equations (General Education)	3
MATH-241	Linear Algebra (General Education)	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
SWEN-261	Introduction to Software Engineering	3
	General Education – Ethical Perspective	3
Third Year		
CMPE-350	Computer Organization	3
CMPE-380	Applied Programming in C	3
CMPE-499	Co-op (spring and summer)	0
EEEE-282	Circuits II	3
EEEE-380	Digital Electronics	3
	General Education – Global Perspective	3
Fourth Year		
CMPE-460	Interface and Digital Electronics (WI-PR)	4
CMPE-480	Digital Signal Processing	3
CMPE-499	Co-op (fall and summer)	0
CMPE-550	Computer Architecture	3
MATH-251	Probability and Statistics (General Education)	3
	General Education – Immersion	3
Fifth Year		
CMPE-497	Multidisciplinary Senior Design I	3
CMPE-498	Multidisciplinary Senior Design II (WI-PR)	3
CMPE-570	Data and Communication Networks	3
	General Education – Immersion 2, 3	6
	Professional Electives	6
	Open Electives	9
Total Semester Credit Hours		**129**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Computer Engineering, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CMPE-110	Introduction to Computer Engineering	1
CMPE-160	Digital System Design I	3
CSCI-141	Computer Science I (General Education – Elective)	4
CSCI-142	Computer Science II (General Education – Elective)	4
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	First-Year Writing (WI) (General Education)	3
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
Second Year		
CMPE-250	Assembly and Embedded Programming	3
CMPE-260	Digital System Design II	4
EEEE-281	Circuits I	3
EGEN-99	Engineering Co-op Preparation	0
MATH-190	Discrete Mathematics for Computing (General Education – Elective)	3
MATH-219	Multivariable Calculus (General Education – Elective)	3
MATH-231	Differential Equations (General Education – Elective)	3
MATH-241	Linear Algebra I (General Education – Elective)	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
SWEN-261	Introduction to Software Engineering	3
	General Education – Ethical Perspective	3
Third Year		
CMPE-350	Computer Organization	3
CMPE-380	Applied Programming in C	3
CMPE-499	Co-op (spring and summer)	0
EEEE-282	Circuits II	3
EEEE-380	Digital Electronics	3
MATH-251	Probability and Statistics (General Education – Elective)	3
	General Education – Global Perspective	3
Fourth Year		
CMPE-460	Interface and Digital Electronics (WI-PR)	4
CMPE-480	Digital Signal Processing	3
CMPE-497	Multidisciplinary Senior Design I	3
CMPE-499	Co-op (summer)	0
CMPE-550	Computer Architecture	3
CMPE-610	Analytical Topics in Computer Engineering	3
CMPE-670	Data and Communication Networks	3
CMPE-795	Graduate Seminar	0
Choose one of the following:		3
CMPE-630	Digital Integrated Circuit Design	
CMPE-660	Reconfigurable Computing	
CMPE-755	High Performance Architectures	
	Professional Elective	3
	General Education – Immersion 1, 2	6
	Open Elective	3
Fifth Year		
CMPE-498	Multidisciplinary Senior Design II	3
	Graduate Electives	12
	General Education – Immersion 3	3
	Open Elective	3
Choose one of the following:		9
CMPE-790	Thesis	
CMPE-792	Graduate Project plus two additional Project Focus Electives	
	Graduate Elective plus two additional Flexible Core Courses†	
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Completing this option requires passing a comprehensive examination.

Computer Engineering, BS degree/ Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CMPE-110	Introduction to Computer Engineering	1
CMPE-160	Digital System Design I	3
CSCI-141	Computer Science I	4
CSCI-142	Computer Science II	4
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Elective	3
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
Second Year		
CMPE-250	Assembly and Embedded Programming	3
CMPE-260	Digital System Design II	4
EEEE-281	Circuits I	3
EGEN-099	Engineering Co-op Preparation	0
MATH-190	Discrete Mathematics for Computing	3
MATH-219	Multivariable Calculus	3
MATH-231	Differential Equations	3
MATH-241	Linear Algebra	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
SWEN-261	Introduction to Software Engineering	3
	General Education – Ethical Perspective	3
Third Year		
CMPE-350	Computer Organization	3
CMPE-380	Applied Programming in C	3
CMPE-499	Co-op (spring)	0
EEEE-282	Circuits II	3
EEEE-380	Digital Electronics	3
	General Education – Global Perspective	3
Fourth Year		
CMPE-460	Interface and Digital Electronics (WI-PR)	4
CMPE-480	Digital Signal Processing	3
CMPE-499	Co-op (summer)	0
CMPE-550	Computer Architecture	3
CMPE-570	Data and Communication Networks	3
MATH-251	Probability and Statistics	3
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
	Graduate Professional Elective: Policy Elective	3
	Open Elective	3
	General Education – Immersion 1	3
Fifth Year		
CMPE-497	Multidisciplinary Senior Design I	3
CMPE-498	Multidisciplinary Senior Design II	3
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	Professional Elective/Graduate Policy Elective	3
	Policy Graduate Elective	3
	General Education – Immersion 2, 3	6
	Open Elective	3
Choose one of the following:		6
PUBL-785	Capstone Experience	
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam plus 2 Graduate Electives	
Total Semester Credit Hours		**150**

Please see General Education Curriculum for more information.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The BS program in computer engineering is accredited by the Engineering Accreditation Commission of ABET. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of math is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science. Chemistry and physics are required.

Transfer Admission

Transfer course recommendations without associate degree

Pre-engineering courses such as calculus, calculus-based physics, chemistry, and liberal arts.

Appropriate associate degree programs for transfer

AS degree in engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Electrical Engineering, BS

www.rit.edu/study/electrical-engineering-bs
Ferat Sahin, Professor
5854752175, feseee@rit.edu

Program overview

The electrical engineering BS degree addresses the high-technology needs of business and industry through a rich academic major taught in state-of-the-art facilities that include topics such as:

- Analog and digital integrated circuits
- Digital signal processing
- Radiation and propagation
- Power electronics
- Circuit theory
- Computer-aided design
- Solid-state devices
- Microelectromechanical systems (MEMs)
- Robotics

RIT's Electrical Engineering Bachelor of Science Curriculum

The electrical engineering major is a five-year program designed to prepare you for exciting careers within the electrical engineering and allied disciplines. In addition to a comprehensive curriculum, you will spend nearly a year on co-op, where you will gain invaluable hands-on experience in industry. Your co-ops will begin after your second year of study. View sample co-op schedules and learn more about engineering co-ops.

- Years 1 and 2 – Establish a foundation in mathematics and the physical sciences, which is essential to the study of electrical engineering. In other courses, you will learn about electrical engineering principles such as circuits and digital systems. Practicum courses introduce you to electrical engineering practice and computer-aided design (CAD) tools that are used throughout the program.
- Years 3 and 4 – Focus on the subjects that form the core of electrical engineering. Courses in circuits, electronics, linear systems, electromagnetic fields, semiconductor devices, communication systems, control systems, and microelectromechanical systems are taught.
- Year 5 – Specialize in an area of professional interest and complete a senior design project as part of the graduation requirements

Learn more about the Student Learning Outcomes and Program Educational Objectives for the Electrical Engineering BS.

Electrical Engineering Degree Options

Students may select one of the following options, which provide in-depth study in a focused area of electrical engineering:

- Artificial Intelligence – The artificial intelligence option teaches you how agents work, while understanding the ethical implications and societal impacts of their designs.
- Clean and Renewable Energy – The clean and renewable energy option provides an in-depth education into the development of clean electrical energy and the increased efficiency of existing electrical generation and distribution systems.
- Computer Engineering – The computer engineering option educates you in areas such as C programming, object-oriented programming, and logic design.
- Robotics – The robotics option provides you with the theoretical and practical skills required to design robots and robotic devices.

Hands-On Experience in Electrical Engineering

Multidisciplinary Senior Design: A highlight of the applied engineering experience is the senior project. You will work on a challenging project under the tutelage of an experienced faculty advisor. While experiencing the satisfaction of completing an interesting project and exploring the latest in technology, students develop engineering management and project organization skills, learn to communicate their ideas effectively within a multidisciplinary team, and present their project and ideas to a diverse audience of students, faculty, and industrial partners. Explore our students' multidisciplinary design projects.

What's The Difference Between Engineering and Engineering Technology?

It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering or engineering technology is more about identifying what you like to do and how you like to do it.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the electrical engineering degree are required to complete four blocks (48 weeks) of cooperative education experience.

Curriculum

Electrical Engineering, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers	3
EEEE-105	Freshman Practicum	1
EEEE-120	Digital Systems I	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
Second Year		
CMPR-271	Computational Problem Solving for Engineers	3
EEEE-220	Digital Systems II	3
EEEE-260	Introduction to Semiconductor Devices	3
EEEE-281	Circuits I	3
EEEE-281R	Circuits I Recitation	0
EEEE-282	Circuits II	3
EEEE-346	Advanced Programming	3
EGEN-99	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus	4
MATH-231	Differential Equations	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective:)	4
	General Education – Ethical Perspective	3
Third Year		
EEEE-353	Linear Systems	4
EEEE-374	EM Fields and Transmission Lines	4
EEEE-380	Digital Electronics	3
EEEE-499	Co-op (fall and summer)	0
MATH-381	Complex Variables	3
	General Education – Immersion	3
Fourth Year		
EEEE-414	Classical Control	3
EEEE-420	Embedded Systems Design	3
EEEE-480	Analog Electronics	4
EEEE-499	Co-op (spring and summer)	0
MATH-251	Probability and Statistics	3
	Open Elective	3
Fifth Year		
EEEE-484	Communication Systems (WI-PR)	3
EEEE-497	Multidisciplinary Senior Design I	3
EEEE-498	Multidisciplinary Senior Design II	3
	Professional Electives	9
	General Education – Immersion 2, 3	6
	Open Electives	6
Total Semester Credit Hours		**129**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Professional Options

Students who elect to pursue a Professional Option may use any combination of Open and Professional Electives to complete one of the options listed below:

Artificial Intelligence

Required Courses	
EEEE-447	Introduction to Artificial Intelligence
EEEE-547	Artificial Intelligence Explorations
EEEE-536	Biorobotics/Cybernetics

Clean and Renewable Energy

Required Courses	
EEEE-221	Clean & Renewable Energy Systems & Sources
EEEE-321	Energy Conversion
EEEE-522	Electric Power Transmission & Distribution
EEEE-546	Power Electronics

Computer Engineering

Required Courses	
EEEE-520	Design of Digital Systems
EEEE-521	Design of Computer Systems
	EE/CE/CS Restricted Elective

Robotics

Required Courses	
EEEE-485	Robotic Systems
EEEE-585	Principles of Robotics
EEEE-784	Advanced Robotics

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Electrical Engineering, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers	3
EEEE-105	Freshman Practicum	1
EEEE-120	Digital Systems I	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	First Year Writing (WI) (General Education)	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Second Year		
CMPR-271	Computational Problem Solving for Engineers	3
EGEN-099	Engineering Co-op Preparation	0
EEEE-220	Digital Systems II	3
EEEE-260	Introduction to Semiconductor Devices	3
EEEE-281	Circuits I	3
EEEE-281R	Circuits I Recitation	0
EEEE-282	Circuits II	3
EEEE-346	Advanced Programming	3
MATH-221	Multivariable and Vector Calculus	4
MATH-231	Differential Equations (General Education – Elective)	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Ethical Perspective	3
Third Year		
EEEE-353	Linear Systems	4
EEEE-374	EM Fields and Transmission Lines	4
EEEE-380	Digital Electronics	3
EEEE-499	Co-op (fall and summer)	0
MATH-381	Complex Variables	3
	General Education – Immersion 1	3
Fourth Year		
EEEE-414	Classical Control	3
EEEE-420	Embedded Systems Design	3
EEEE-480	Analog Electronics	4
EEEE-484	Communication Systems (WI-PR)	3
EEEE-497	Multidisciplinary Senior Design I	3
EEEE-499	Co-op (summer)	0
EEEE-602	Random Signals and Noise	3
EEEE-707	Engineering Analysis	3
EEEE-795	Graduate Seminar	0
MATH-251	Probability and Statistics	3
	General Education – Immersion 2	3
	Open Elective	3
Fifth Year		
EEEE-498	Multidisciplinary Senior Design II	3
EEEE-709	Advanced Engineering Mathematics	3
Choose one of the following:		6
EEEE-790	Thesis	
EEEE-792	Graduate Paper plus 1 Graduate Elective	
EEEE-795	Graduate Seminar	0
	Open Elective	6
	Professional Electives	9
	Graduate Electives	6
	General Education – Immersion 3	3
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Electrical Engineering, BS degree/ Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers	3
EEEE-105	Freshman Practicum	1
EEEE-120	Digital Systems I	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II ((General Education – Mathematical PerspectiveB)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
Second Year		
CMPR-271	Computational Problem Solving for Engineers	3
EEEE-220	Digital Systems II	3
EEEE-260	Introduction to Semiconductor Devices	3
EEEE-281	Circuits I	3
EEEE-282	Circuits II	3
EEEE-346	Advanced Programming	3
EGEN-099	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus	4
MATH-231	Differential Equations	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Ethical Perspective	3
Third Year		
EEEE-353	Linear Systems	4
EEEE-374	EM Fields and Transmission Lines	4
EEEE-380	Digital Electronics	3
EEEE-499	Co-op (fall)	0
MATH-381	Complex Variables	3
	General Education - Immersion 1	3
Fourth Year		
EEEE-414	Classical Control	3
EEEE-420	Embedded Systems Design	3
EEEE-480	Analog Electronics	4
EEEE-499	Co-op (summer)	0
MATH-251	Probability and Statistics	3
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
	Professional Electives	6
	General Education - Immersion 2,3	6
Fifth Year		
EEEE-484	Communication Systems (WI-PR)	3
EEEE-497	Multidisciplinary Senior Design Project I	3
EEEE-498	Multidisciplinary Senior Design Project II	3
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	Public Policy Electives	6
	Open Elective	3
Choose one of the following:		6
PUBL-785	Capstone Research Experience	
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam plus 2 Graduate Electives	
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The BS in electrical engineering program is accredited by the Engineering Accreditation Commission of ABET. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of math is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science. Chemistry and physics are required.

Transfer Admission

Transfer course recommendations without associate degree

Pre-engineering courses such as calculus, calculus-based physics, chemistry, and liberal arts.

Appropriate associate degree programs for transfer

AS degree in engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Engineering Exploration

www.rit.edu/study/engineering-exploration

Matthew Marshall, Professor
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Program overview

If you are passionate about engineering and all it encompasses – from science, mathematics, innovation, and design to processes and operations – but aren't sure which major best matches your interests and career goals, the engineering exploration option is for you. Through a seminar offered in your first semester, you will gain an in-depth understanding of each engineering major, enabling you to identify the program that best meets your interests and career aspirations. You will have a full academic year to make an informed decision about the engineering career path that's best for you as you remain on pace to graduate on time.

The engineering exploration option is for students who would like additional time to fully explore RIT's portfolio of engineering majors before committing to a program of study. Students may choose a major anytime during the first year.

What You'll Study

During your first semester, you'll take a one-credit course, Engineering Exploration Seminar, which provides an overview of RIT's engineering programs and the career opportunities in each field. Since each engineering program shares similar first-year course offerings, the course work you take as an engineering exploration student will transfer into all engineering programs without any loss of time toward graduation.

Students in the engineering exploration program are guaranteed admission into any engineering program in the Kate Gleason College, provided the student is in good academic standing and has successfully completed Calculus I.

Engineering vs. Engineering Technology

Two dynamic areas of study, both with outstanding outcomes rates. Which do you choose?

What's the difference between engineering and engineering technology? It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering vs. engineering technology is more about identifying what you like to do and how you like to do it.

Curriculum

Engineering Exploration, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-181	Calculus I	4
CHMG-131	General Chemistry for Engineers	3
EGEN-100	Engineering Exploration Seminar (fall)	1
	General Education- First Year Writing	3
	General Education Perspective Courses	9-12
MATH-182	Calculus II	4
PHYS-211	University Physics I	4
	Engineering Course‡	3-6
YOPS-10	RIT 365: RIT Connections	0
	Wellness Education*	0
Total Semester Credit Hours		**31-37**

Please see General Education Framework for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students choose one or two engineering courses in consultation with their adviser.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of math is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science. Chemistry and physics are required.

Transfer Admission

Transfer course recommendations without associate degree

Pre-engineering courses such as calculus, calculus-based physics, chemistry, and liberal arts.

Appropriate associate degree programs for transfer

AS degree in engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Industrial Engineering, BS

www.rit.edu/study/industrial-engineering-bs
Matthew Marshall, Professor
585-475-7142, mmmeie@rit.edu

Program overview

The industrial engineering degree is for students interested in optimizing, designing, and managing the processes by which goods are made and distributed, and services are efficiently provided. Industrial engineering also ensures that high-quality products and services are delivered in a cost-effective manner. Industrial engineers aid companies globally, balancing sustainable design with skillful construction of systems. Graduates of the industrial engineering degree are able to address big-picture design and engineering questions, such as how engineers can simultaneously increase efficiency and quality.

What is Industrial Engineering?

Industrial engineers design, optimize, and manage the process by which products are made and distributed across the world (i.e., global supply chain), or the way services are delivered in industries such as banking, health care, energy, or entertainment. Industrial engineers ensure that high-quality products and services are delivered in a cost-effective manner.

Industrial engineering is ideal for those who enjoy both technology and working with people. Industrial engineers frequently spend as much time interacting with other engineers and product users as they do at their desks and computers. Typical work involves developing applied models and simulations of processes to evaluate overall system efficiency.

A degree in industrial engineering offers students a significant opportunity for a flexible long-term career. Employers have consistently praised the quality of RIT's industrial engineering graduates, noting that the range of their abilities includes both strong technical knowledge and communication skills. Graduates have used their technical base as a springboard to careers in management, consulting, manufacturing, sales, health care, law, and education.

As described by the Institute of Industrial and Systems Engineers on the organization's website:

"Industrial engineering is about choices. Other engineering disciplines apply skills to very specific areas. IE gives practitioners the opportunity to work in a variety of businesses.

Many practitioners say that industrial engineering education offers the best of both worlds: an education in both engineering and business.

The most distinctive aspect of industrial engineering is the flexibility it offers. Whether it's shortening a roller coaster line, streamlining an operating room, distributing products worldwide, or manufacturing superior automobiles, these challenges share the common goal of saving companies money and increasing efficiencies.

As companies adopt management philosophies of continuous productivity and quality improvement to survive in the increasingly competitive world market, the need for industrial engineers is growing. Why? Industrial engineers are the only engineering professionals trained specifically to be productivity and quality improvement specialists.

Industrial engineers figure out how to do things better. They engineer processes and systems that improve quality and productivity. They work to eliminate waste of time, money, materials, energy and other commodities. This is why many industrial engineers end up being promoted into management positions.

Many people are misled by the term industrial engineer. It's not just about manufacturing. It also encompasses service industries, with many IEs employed in entertainment industries, shipping and logistics businesses, and health care organizations."

Industrial engineers are "big-picture" thinkers, much like systems integrators. IEs spend most of their time out in the work environment, using scientific approaches to solve today's problems while they develop solutions for the future.

Industrial Engineering Curriculum

Because of the flexible nature of the industrial engineering degree, students gain a breadth of knowledge in many different areas of industrial engineering, including advanced manufacturing, distribution/logistics, ergonomics/human factors, modeling/simulation, and sustainable design and development. Students may choose free and professional electives for this purpose.

The curriculum for the BS in industrial engineering covers the principal concepts of engineering economics and project management, facilities planning, human performance, mathematical and simulation modeling, production control, applied statistics and quality, and contemporary manufacturing production processes that are applied to solve the challenges presented by the global environment and economy of today. Courses in industrial engineering stress the application of contemporary tools and techniques in solving engineering problems. Learn more about Student Learning Outcomes and Program Educational Objectives for the industrial engineering BS degree.

Industrial Engineering Careers

In order to optimize processes and systems, industrial engineers apply their knowledge in a wide range of areas, including systems simulation modeling, quality, logistics and supply chain management, ergonomics and human factors, facilities layout, production planning and control, manufacturing, management information systems, and project management. Upon graduation, our students work for a wide array of fields (ranging from manufacturing and distribution/logistics to health care, energy and other services) and companies (including Boeing, IBM, Toyota, Xerox, Intel, General Electric, Hershey, Walt Disney World, Tesla, Ortho-McNeil Pharmaceutical, Lockheed Martin, and Wegmans Food Markets, to name a few.)

Balance, as well as specialization, has allowed our graduates to pursue varied paths. Examples of the diversity, along with the roles in which an industrial engineer might function, are reflected in the following list of sample industrial engineering co-op assignments.

In manufacturing industries:

- Perform product life studies
- Lay out and improve work areas
- Design production processes to improve productivity
- Investigate and analyze the cost of purchasing new vs. repairing existing equipment
- Investigate delivery service, including scheduling, route modification, and material handling
- Create computer programs to track pricing policies and truck scheduling
- Perform downtime studies of various operations using time study and work sampling
- Develop and computerize a forecasting model
- Perform ergonomic studies and evaluations of workstations and product designs
- Participate in the design process of products and processes to ensure ease of manufacture, maintenance, and remanufacture or recycling

In service industries:

- Design information systems
- Monitor safety and health programs
- Manage hazardous and toxic materials storage and disposal programs
- Manage a facility's projects to ensure they are completed on time and on budget
- Conduct cost analysis of procedures to support decision making
- Schedule operations and manage information flow
- Design supply-ordering systems
- Improve processes in a hospital
- Evaluate waiting time and space utilization in an amusement park

Engineering vs. Engineering Technology

Two dynamic areas of study, both with outstanding outcomes rates. Which do you choose?

What's the difference between engineering and engineering technology? It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering vs. engineering technology is more about identifying what you like to do and how you like to do it.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the industrial engineering degree are required to complete four blocks (48 weeks) of cooperative education experience.

Curriculum

Industrial Engineering, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education)	3
ISEE-120	Fundamentals of Industrial Engineering	3
ISEE-140	Materials Processing	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	First-Year Writing (WI) (General Education)	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Elective	3
Second Year		
EGEN-99	Engineering Co-op Preparation	0
ISEE-200	Computing for Engineers (General Education)	3
ISEE-325	Engineering Statistics and Design of Experiments	3
ISEE-345	Engineering Economy	3
MATH-221	Multivariable and Vector Calculus (General Education)	4
MATH-233	Linear Systems and Differential Equations (General Education)	4
MATH-251	Probability and Statistics (General Education)	3
MECE-200	Fundamentals of Mechanics	4
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
ISEE-301	Operations Research	4
ISEE-304	Fundamentals of Materials Science	3
ISEE-323	Systems and Facilities Planning	3
ISEE-330	Ergonomics and Human Factors (WI-PR)	4
ISEE-350	Engineering Management	3
ISEE-499	Co-op (fall and summer)	0
Fourth Year		
ISEE-420	Production Planning/Scheduling	3
ISEE-499	Co-op (spring and summer)	0
ISEE-510	Systems Simulation	3
ISEE-560	Applied Statistical Quality Control	3
	Professional Elective	3
	General Education – Immersion	3
Fifth Year		
ISEE-497	Multidisciplinary Senior Design I	3
ISEE-498	Multidisciplinary Senior Design II (WI-PR)	3
ISEE-561	Linear Regression Analysis	3
	Professional Electives	6
	Open Electives	9
	General Education – Immersion 2, 3	6
Total Semester Credit Hours		**129**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Professional Options

Students who elect to pursue a Professional Option may use any combination of Open and Professional Electives to complete one of the options listed below:

Ergonomics/Human Factors

Electives	
ISEE-730	Biomechanics of Human Movement
ISEE-731	Advanced Topics in Human Factors and Ergonomics
ISEE-732	Systems Safety Engineering
ISEE-734	Graduate Engineering Psychology
ISEE-760	Design of Experiments

Lean Six Sigma

Electives	
ISEE-582	Lean Six Sigma Fundamentals
ISEE-626	Contemporary Production Systems
ISEE-728	Production Systems Management
ISEE-760	Design of Experiments

Manufacturing

Electives	
ISEE-626	Contemporary Production Systems
ISEE-640	Computer-Aided Design & Mfg
ISEE-740	Design for Manufacture and Assembly
ISEE-741	3D Printing
ISEE-787	Design for Enviroment

Supply Chain Management

Electives	
ISEE-703	Supply Chain Management
ISEE-704	Logistics Management
Choose one of the following	
ISEE-708	Simulation Analysis
ISEE-711	Advanced Simulation
ISEE-720	Production Control

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Industrial Engineering, BS degree/ Industrial and Systems Engineering, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Elective)	3
ISEE-120	Fundamentals of Industrial Engineering	3
ISEE-140	Materials Processing	3
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	First-Year Writing (WI) (General Education)	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Elective	3
Second Year		
EGEN-99	Engineering Co-op Preparation	0
ISEE-200	General Education – Elective: Computing for Engineers	3
ISEE-325	Engineering Statistics and Design of Experiments	3
ISEE-345	Engineering Economy	3
ISEE-499	Co-op (summer)	0
MATH-221	Multivariable and Vector Calculus (General Education – Elective)	4
MATH-233	Linear Systems and Differential Equations (General Education – Elective)	4
MATH-251	Probability and Statistics (General Education – Elective)	3
MECE-200	Fundamentals of Mechanics	4
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
ISEE-301	Operations Research	4
ISEE-304	Fundamentals of Materials Science	3
ISEE-323	Systems and Facilities Planning	3
ISEE-330	Ergonomics and Human Factors (WI-PR)	4
ISEE-350	Engineering Management	3
ISEE-499	Co-op (fall, summer)	0
Fourth Year		
ISEE-420	Production Planning/Scheduling	3
ISEE-499	Co-op (summer)	0
ISEE-510	Systems Simulation	3
ISEE-560	Applied Statistical Quality Control	3
ISEE-760	Design of Experiments	3
ISEE-795	Graduate Seminar (fall and spring)	0
	Professional Electives	9
	Open Electives	9
	General Education – Immersion 1, 2	6
Fifth Year		
ISEE-497	Multidisciplinary Senior Design I	3
ISEE-498	Multidisciplinary Senior Design II	3
ISEE-561	Linear Regression Analysis	3
ISEE-771	Engineering of Systems I	3
Choose one of the following:		6
ISEE-788	Project with Paper plus 1 additional Graduate Elective	
ISEE-790	Thesis	
ISEE-792	Engineering Capstone plus 1 additional Graduate Elective	
	Graduate Electives	9
	General Education – Immersion 3	3
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Industrial Engineering, BS degree/ Engineering Management, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Elective)	3
ISEE-120	Fundamentals of Industrial Engineering	3
ISEE-140	Materials Processing	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
Second Year		
EGEN-99	Engineering Co-Op Preparation	0
ISEE-200	Computing for Engineers (General Education – Elective)	3
ISEE-325	Engineering Statistics and Design of Experiments	3
ISEE-345	Engineering Economy	3
ISEE-499	Co-op (summer)	0
MATH-221	Multivariable and Vector Calculus (General Education – Elective)	4
MATH-233	Linear Systems and Differential Equations (General Education – Elective)	4
MATH-251	Probability and Statistics (General Education – Elective)	3
MECE-200	Fundamentals of Mechanics	4
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
ISEE-301	Operations Research	4
ISEE-323	Systems and Facilities Planning	3
ISEE-330	Ergonomics and Human Factors (WI-PR)	4
ISEE-350	Engineering Management	3
ISEE-499	Co-op (fall, summer)	0
ISEE-304	Fundamentals of Materials Science	3
Fourth Year		
ISEE-420	Production Planning/Scheduling	3
ISEE-499	Co-op (summer)	0
ISEE-510	Systems Simulation	3
ISEE-560	Applied Statistical Quality Control	3
ISEE-752	Decision Analysis	3
ISEE-795	Graduate Seminar*	0
	Professional Electives	9
	Open Electives	9
	General Education – Immersion 1, 2	6
Fifth Year		
ISEE-497	Multidisciplinary Senior Design I	3
ISEE-498	Multidisciplinary Senior Design II	3
ISEE-750	Systems and Project Management	3
ISEE-773	Engineering Value Creation	3
MGMT-740	Leading Teams in Organizations	3
Choose one of the following:		6
ISEE-792	Engineering Capstone plus 1 additional Graduate KGCOE or SCB Elective	
ISEE-794	Leadership Capstone plus 2 additional Graduate KGCOE or SCB Electives†	
ISEE-788	Project with Paper plus 1 additional Graduate KGCOE or SCB elective	
	Graduate KGCOE or SCB Elective	3
	General Education – Immersion 3	3
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
*ISEE-795 Graduate Seminar is prescribed for students taking the Thesis option and is to be taken in both the fall and spring semester.
† At least one of these Graduate Electives must be KGCOE.

Industrial Engineering, BS degree/ Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education)	3
ISEE-120	Fundamentals of Industrial Engineering	3
ISEE-140	Materials Processing	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
Second Year		
ISEE-200	Computing for Engineers (General Education)	3
ISEE-325	Engineering Statistics and Design of Experiments	3
ISEE-345	Engineering Economy	3
MATH-221	Multivariable and Vector Calculus (General Education)	4
MATH-233	Linear Systems and Differential Equations (General Education)	4
MATH-251	Probability and Statistics (General Education)	3
MECE-200	Fundamentals of Mechanics	4
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
ISEE-301	Operations Research	4
ISEE-304	Fundamentals of Materials Science	3
ISEE-323	Systems and Facilities Planning	3
ISEE-330	Ergonomics and Human Factors (WI-PR)	4
ISEE-350	Engineering Management	3
ISEE-499	Co-op (fall, summer)	0
Fourth Year		
ISEE-420	Production Planning/Scheduling	3
ISEE-560	Applied Statistical Quality Control	3
ISEE-499	Co-op (summer)	0
ISEE-510	Systems Simulation	3
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
	General Education – Immersion 1, 2, 3	9
	Professional Elective	3
	Professional Elective/Public Policy Elective	3
Fifth Year		
ISEE-497	Multidisciplinary Senior Design I	3
ISEE-498	Multidisciplinary Senior Design II	3
ISEE-561	Linear Regression Analysis	3
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	Open Electives	6
	Public Policy Electives	3
	Professional Elective/Public Policy Elective	3
Choose one of the following:		6
PUBL-785	Capstone Experience	
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam plus 2 Graduate Electives	
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

The industrial engineering BS/Industrial and systems engineering ME is no longer accepting applications for admission.

Industrial Engineering, BS degree/ Industrial and Systems Engineering, ME degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Elective)	3
ISEE-120	Fundamentals of Industrial Engineering	3
ISEE-140	Materials Processing	3
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
Second Year		
ISEE-200	Computing for Engineers (General Education – Elective)	3
ISEE-325	Engineering Statistics and Design of Experiments	3
ISEE-345	Engineering Economy	3
ISEE-499	Co-op (summer)	0
MATH-221	Multivariable and Vector Calculus (General Education – Elective)	4
MATH-233	Linear Systems and Differential Equations (General Education – Elective)	4
MATH-251	Probability and Statistics (General Education – Elective)	3
MECE-200	Fundamentals of Mechanics	4
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
ISEE-301	Operations Research	4
ISEE-323	Systems and Facilities Planning	3
ISEE-330	Ergonomics and Human Factors (WI-PR)	4
ISEE-350	Engineering Management	3
ISEE-499	Co-op (fall, summer)	0
MECE-304	Fundamentals of Materials Science	2
MECE-306	Materials Science and Applications Laboratory	1
Fourth Year		
ISEE-420	Production Planning/Scheduling	3
ISEE-499	Co-op (summer)	0
ISEE-510	Systems Simulation	3
ISEE-560	Applied Statistical Quality Control	3
ISEE-760	Design of Experiments	3
	Professional Electives	9
	Open Electives	9
	General Education – Immersion 1, 2	6
Fifth Year		
ISEE-497	Multidisciplinary Senior Design I	3
ISEE-498	Multidisciplinary Senior Design II	3
ISEE-561	Linear Regression Analysis	3
ISEE-771	Engineering of Systems I	3
Choose one of the following:		3
ISEE-792	Engineering Capstone	
ISEE-794	Leadership Capstone plus 1 additional Graduate Elective	
	Graduate Electives	12
	General Education – Immersion 3	3
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Industrial Engineering, BS degree/ Industrial and Systems Engineering, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Elective)	3
ISEE-120	Fundamentals of Industrial Engineering	3
ISEE-140	Materials Processing	3
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
Second Year		
EGEN-99	Engineering Co-Op Preparation	0
ISEE-200	Computing for Engineers (General Education – Elective)	3
ISEE-325	Engineering Statistics and Design of Experiments	3
ISEE-345	Engineering Economy	3
ISEE-499	Co-op (summer)	0
MATH-221	Multivariable and Vector Calculus (General Education – Elective)	4
MATH-233	Linear Systems and Differential Equations (General Education – Elective)	4
MATH-251	Probability and Statistics (General Education – Elective)	3
MECE-200	Fundamentals of Mechanics	4
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
ISEE-301	Operations Research	4
ISEE-323	Systems and Facilities Planning	3
ISEE-330	Ergonomics and Human Factors (WI-PR)	4
ISEE-350	Engineering Management	3
ISEE-499	Co-op (fall, summer)	0
ISEE-304	Fundamentals of Materials Science	2
Fourth Year		
ISEE-420	Production Planning/Scheduling	3
ISEE-499	Co-op (summer)	0
ISEE-510	Systems Simulation	3
ISEE-560	Applied Statistical Quality Control	3
ISEE-760	Design of Experiments	3
	Professional Electives	9
	Open Electives	9
	General Education – Immersion 1, 2	6
ISEE-795	Graduate Seminar (fall, spring)	0
Fifth Year		
ISEE-497	Multidisciplinary Senior Design I	3
ISEE-498	Multidisciplinary Senior Design II	3
ISEE-561	Linear Regression Analysis	3
ISEE-771	Engineering of Systems I	3
Choose one of the following:		6
ISEE-792	Engineering Capstone plus 1 additional Graduate Elective	
ISEE-788	Project with Paper plus 1 additional Graduate Elective	
ISEE-790	Thesis	
	Graduate Electives	9
	General Education – Immersion 3	3
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Industrial Engineering, BS degree/ Sustainable Engineering, MS degree, typical course sequence

The combined accelerated bachelor's/master's degree in industrial engineering BS/sustainable engineering MS is no longer accepting applications for admission. This does not effect students who are currently enrolled in the dual degree or those who were pre-accepted to the dual degree program. program.

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Elective)	3
ISEE-120	Fundamentals of Industrial Engineering	3
ISEE-140	Materials Processing	3
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	First-Year Writing (WI) (General Education)	3
	General Education – Elective	3
Second Year		
EGEN-99	Engineering Co-op Preparation	0
ISEE-200	Computing for Engineers (General Education – Elective)	3
ISEE-325	Engineering Statistics and Design of Experiments	3
ISEE-345	Engineering Economy	3
ISEE-499	Co-op (summer)	0
MATH-221	Multivariable and Vector Calculus (General Education – Elective)	4
MATH-233	Linear Systems and Differential Equations (General Education – Elective)	4
MATH-251	Probability and Statistics (General Education – Elective)	3
MECE-200	Fundamentals of Mechanics	4
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
ISEE-301	Operations Research	4
ISEE-304	Fundamentals of Materials Science	3
ISEE-323	Systems and Facilities Planning	3
ISEE-330	Ergonomics and Human Factors (WI-PR)	4
ISEE-350	Engineering Management	3
ISEE-499	Co-op (fall, summer)	0
Fourth Year		
ISEE-420	Production Planning/Scheduling	3
ISEE-499	Co-op (summer)	0
ISEE-510	Systems Simulation	3
ISEE-560	Applied Statistical Quality Control	3
ISEE-795	Graduate Seminar (fall and spring)	0
	Professional Electives	6
	Technology Elective	3
	Social Context Elective	3
	Open Electives	9
	General Education – Immersion 1, 2	6
Fifth Year		
ISEE-497	Multidisciplinary Senior Design I	3
ISEE-498	Multidisciplinary Senior Design II	3
ISEE-561	Linear Regression Analysis	3
ISEE-771	Engineering of Systems I	3
ISEE-785	Fundamentals of Sustainable Engineering	3
ISEE-786	Lifecycle Assessment	3
MECE-629	Renewable Energy Systems	3
Choose one of the following:		3
ISEE-788	Project with Paper	
ISEE-792	Engineering Capstone	
	General Education – Immersion 3	3
	Professional Elective	3
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The BS program in industrial engineering is accredited by the Engineering Accreditation Commission of ABET. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of math is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science. Chemistry and physics are required.

Transfer Admission

Transfer course recommendations without associate degree

Pre-engineering courses such as calculus, calculus-based physics, chemistry, and liberal arts.

Appropriate associate degree programs for transfer

AS degree in engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Integrated Electronics, Certificate

www.rit.edu/study/integrated-electronics-certificate
Ferat Sahin, Professor
5854752175, feseee@rit.edu

Program overview

The certificate in integrated electronics offers a comprehensive curriculum in the design of state-of-the-art electronic circuits for professionals active in the electrical engineering field. Course work builds on an introductory understanding of semiconductor device physics and basic circuit theory. The design of analog and mixed-signal circuits are addressed in study focusing on issues and trade-offs involved in widely used circuits. In addition, the certificate offers an advanced in-depth understanding of all processes involved in designing a modern integrated circuit, including electronic design automation.

This certificate primarily targets people already active in the electrical engineering field and allows experienced technicians and physical designers to become more cross-functional and stronger contributors to multidisciplinary teams. The curriculum provides them with a path for professional growth.

Curriculum

Integrated Electronics, certificate, typical course sequence

COURSE		SEMESTER CREDIT HOURS
EEEE-281	Circuits I	3
EEEE-380	Digital Electronics	3
EEEE-480	Analog Electronics	4
EEEE-726	Mixed-Signal IC Design	3
Total Semester Credit Hours		**13**

Mechanical Engineering, BS

www.rit.edu/study/mechanical-engineering-bs
Bob Carter, Senior Lecturer
585-475-7098, rncbme@rit.edu

Program overview

Wherever there is motion or energy, mechanical engineers have played a role in the innovations that define modern life. RIT's mechanical engineering degree provides students with a broad academic base complemented by hands-on laboratory activities and cooperative education experience. Students may also choose to concentrate their studies with professional electives focusing on aerospace engineering, automotive engineering, energy and the environment, bioengineering, or manufacturing and design.

Mechanical engineering is perhaps the most comprehensive of the engineering disciplines. The mechanical engineer's interests encompass the design of automotive and aerospace systems, bioengineering devices, and energy-related technologies. The spectrum of professional activity for the mechanical engineering graduate runs from research through design and development to manufacturing and sales. Because of their comprehensive training and education, mechanical engineers often are called upon to assume management positions.

The mechanical engineering department offers professional courses in bioengineering, energy systems, applied mechanics, manufacturing, materials science, systems analysis, computer-aided graphics and design, robotics, and automotive and aerospace engineering. The department's laboratories are equipped to provide extensive experimentation in these areas. Laboratory facilities include a well-instrumented wind tunnel, a particle imaging velocimetry laser system for flow visualization, advanced heat transfer systems, robotics, a proton exchange membrane fuel cell, engine dynamometers, fluid flow loops, refrigeration systems, tensile testers, compression testers, torsion testers, hardness testers, X-ray diffractometer, atomic force microscope, dynamic system simulators, a spectrum analyzer, and a well-equipped machine shop.

Mechanical Engineering Course Work

The mechanical engineering BS degree provides students with a broad academic base complemented by hands-on laboratory activities and cooperative education experience. Students devote their first two years to the study of mathematics, physical sciences, liberal arts, and engineering sciences, while the third and fourth years emphasize engineering science, design, and systems.

A student may then specialize by choosing appropriate technical and free elective courses in an area of interest. Each of the listed professional electives includes a significant design project. In the fifth year, students are required to complete Multidisciplinary Senior Design I and II, a two-course capstone design experience.

Students complete liberal arts general education courses in the various perspectives to round out their education. During the course of their studies, students must demonstrate writing competency of the English language by successfully completing a Contemporary Issues course offered by the mechanical engineering department.

Options

Students in the mechanical engineering BS may pursue an option in aerospace engineering, automotive engineering, bioengineering, and energy and environment. These options enable students to gain specialized study in a particular area of mechanical engineering.

Aerospace Engineering: The aerospace engineering option allows for specialized study in all engineering aspects of air- and space-borne vehicles.

Automotive Engineering: In the automotive engineering option, students are immersed in modern automotive engineering, including the design of engines and automotive components such as braking, powertrain systems, vehicle dynamics, lighting systems, transmission, and fuel economy.

Bioengineering: In the bioengineering option, students explore the application of engineering fundamentals to the principles of biology, the life sciences, and the physical sciences.

Energy and Environment: The energy and environment option is focused on the contemporary issues facing the fields of energy and the environment and how engineers can best develop modern technologies that are kinder to the environment while providing the energy resources we need.

Learn more about the Student Learning Outcomes and Program Educational Objectives for the mechanical engineering BS degree.

High-Performance Teams and Professional Organizations

Many of mechanical engineering students participate in high-octane performance teams, including the RIT Formula SAE Racing Team, the SAE Aerodesign Club, the RIT Baja SAE Team, RIT SAE Clean Snowmobile Team, and the Human-Powered Vehicle Competition team. They also are encouraged to participate in the student chapters of professional societies such as the American Society of Mechanical Engineers, the Society of Women Engineers, the National Society of Black Engineers, the Society of Hispanic Professional Engineers, the American Institute of Aeronautics and Astronautics, and the Society of Automotive Engineers.

Engineering vs. Engineering Technology

Two dynamic areas of study, both with outstanding outcomes rates. Which do you choose?

What's the difference between engineering and engineering technology? It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering vs. engineering technology is more about identifying what you like to do and how you like to do it.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the mechanical engineering degree are required to complete four blocks (48 weeks) of cooperative education.

Curriculum

Mechanical Engineering, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MECE-102	Engineering Mechanics Laboratory	3
MECE-103	Statics	3
MECE-104	Engineering Design Tools	3
MECE-117	Introduction to Programming for Engineers	3
YOPS-010	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Elective	3
Second Year		
EGEN-099	Engineering Co-op Preparation	0
MATH-219	Multivariable Calculus (General Education)	3
MATH-231	Differential Equations (General Education)	3
MECE-110	Thermodynamics I	3
MECE-203	Strength of Materials I	3
MECE-204	Strength of Materials I Laboratory	1
MECE-205	Dynamics	3
MECE-210	Fluid Mechanics I	3
MECE-211	Engineering Measurements Lab (WI-PR)	2
	General Education – Global Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Social Perspective	3
	General Education – Immersion	3
Third Year		
EEEE-281	Circuits I	3
MATH-326	Boundary Value Problems	3
MECE-305	Materials Science with Applications	3
MECE-306	Materials Science with Applications Laboratory	1
MECE-320	System Dynamics	3
MECE-499	Co-op (fall and summer)	0
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
Fourth Year		
MATH-241	Linear Algebra (General Education)	3
MECE-301	Engineering Applications Laboratory	2
MECE-310	Heat Transfer I	3
MECE-348	Contemporary Issues (WI-PR)	3
MECE-499	Co-op (fall and summer)	0
	General Education – ME Approved Science Elective	3
	ME Extended Core Elective	3
Fifth Year		
MECE-497	Multidisciplinary Senior Design I	3
MECE-498	Multidisciplinary Senior Design II	3
STAT-205	Applied Statistics (General Education)	3
	ME Applied Elective	3
	ME Extended Core or Applied Elective	3
	General Education – Immersion 2, 3	6
	Open Electives	9
Total Semester Credit Hours		**129**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Professional Options

Students who elect to pursue a Professional Option may use a combination of Extended and Applied Core Electives to complete one of the options listed below:

Aerospace

Required Courses	
MECE-3XX	Extended Core- Aerospace option
MECE-4XX	Applied Core- Aerospace option
MECE-4XX	Applied Core- Aerospace option

Automotive

Required Courses	
MECE-3XX	Extended Core- Automotive option
MECE-4XX	Applied Core- Automotive option
MECE-4XX	Applied Core- Automotive option

Bioengineering

Required Courses	
MECE-3XX	Extended Core- Bioengineering Option
MECE-4XX	Applied Core- Bioengineering Option
MECE-4XX	Applied Core- Bioengineering Option

Energy and Environment

Required Courses	
MECE-3XX	Extended Core- Energy and Environment option
MECE-4XX	Applied Core- Energy and Environment option
MECE-4XX	Applied Core- Energy and Environment option

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Mechanical Engineering, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
MECE-102	Engineering Mechanics Laboratory	3
MECE-103	Statics	3
MECE-104	Engineering Design Tools	3
MECE-117	Introduction to Programming for Engineers	3
YOPS-010	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Elective	3
Second Year		
EGEN-099	Engineering Co-op Preparation	0
MATH-219	Multivariable Calculus (General Education – Elective)	3
MATH-231	Differential Equations (General Education – Elective)	3
MECE-110	Thermodynamics I	3
MECE-203	Strength of Materials I	3
MECE-204	Strength of Materials I Laboratory	1
MECE-205	Dynamics	3
MECE-210	Fluid Mechanics I	3
MECE-211	Engineering Measurements Lab (WI-PR)	2
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Immersion 1	3
Third Year		
EEEE-281	Circuits I	3
MATH-326	Boundary Value Problems (General Education – Elective)	3
MECE-305	Materials Science with Applications	3
MECE-306	Materials Science with Applications Laboratory	1
MECE-320	System Dynamics	3
MECE-499	Cooperative Education (fall and summer)	0
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
Fourth Year		
MATH-241	Linear Algebra (General Education – Elective)	3
MECE-301	Engineering Applications Laboratory	2
MECE-310	Heat Transfer I	3
MECE-348	Contemporary Issues (WI-PR)	3
MECE-499	Cooperative Education (summer)	0
MECE-707	Engineering Analysis	3
MECE-795	Graduate Seminar (fall and spring)	0
STAT-205	Applied Statistics (General Education – Elective)	3
	ME Extended Core Elective	3
	Open Elective	3
	Graduate Electives	9
Fifth Year		
MECE-497	Multidisciplinary Sr. Design I	3
MECE-498	Multidisciplinary Sr. Design II	3
MECE-709	Advanced Engineering Mathematics	3
MECE-790	Thesis	6
	General Education – Immersion 2, 3	6
	Graduate Electives	12
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Mechanical Engineering, BS/ME degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
MECE-102	Engineering Mechanics Laboratory	3
MECE-103	Statics	3
MECE-104	Engineering Design Tools	3
MECE-117	Introduction to Programming for Engineers	3
YOPS-010	RIT 365: RIT Connections	0
	First-Year Writing (WI) (General Education)	3
	General Education – Elective	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
Second Year		
EGEN-099	Engineering Co-op Preparation	0
MATH-219	Multivariable Calculus (General Education – Elective)	3
MATH-231	Differential Equations (General Education – Elective)	3
MECE-110	Thermodynamics I	3
MECE-203	Strength of Materials I	3
MECE-204	Strength of Materials I Laboratory	1
MECE-205	Dynamics	3
MECE-210	Fluid Mechanics I	3
MECE-211	Engineering Measurements Lab (WI-PR)	2
	General Education – Global Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Social Perspective	3
	General Education – Immersion 1	3
Third Year		
EEEE-281	Circuits I	3
MATH-326	Boundary Value Problems (General Education – Elective)	3
MECE-305	Materials Science with Applications	3
MECE-306	Materials Science with Applications Laboratory	1
MECE-320	System Dynamics	3
MECE-499	Cooperative Education (fall and summer)	0
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
Fourth Year		
MATH-241	Linear Algebra (General Education – Elective)	3
MECE-301	Engineering Applications Laboratory	2
MECE-310	Heat Transfer I	3
MECE-348	Contemporary Issues (WI-PR)	3
MECE-499	Cooperative Education (summer)	0
MECE-707	Engineering Analysis	3
MECE-730	Design Project Leadership	3
MECE-795	Graduate Seminar (fall and spring)	0
STAT-205	Applied Statistics (General Education – Elective)	3
	General Education – ME Approved Science Elective	3
	ME Extended Core Elective	3
	Open Elective	3
	Graduate Electives	6
Fifth Year		
MECE-497	Multidisciplinary Sr. Design I	3
MECE-498	Multidisciplinary Sr. Design II	3
MECE-709	Advanced Engineering Mathematics	3
	General Education – Immersion 2, 3	6
	Open Elective	3
	Graduate Electives	15
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Mechanical Engineering, BS degree/Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MECE-102	Engineering Mechanics Laboratory	3
MECE-103	Statics	3
MECE-104	Engineering Design Tools	3
MECE-117	Introduction to Programming for Engineers	3
YOPS-010	RIT 365: RIT Connections	0
	General Education - First Year Writing (WI)	3
	General Education - Ethical Perspective	3
	General Education - Artistic Perspective	3
	General Education - Elective	3
Second Year		
EGEN-099	Engineering Co-op Preparation	0
MATH-219	Multivariable Calculus	3
MATH-231	Differential Equations	3
MECE-110	Thermodynamics I	3
MECE-203	Strength of Materials I	3
MECE-204	Strength of Materials I Laboratory	1
MECE-205	Dynamics	3
MECE-210	Fluid Mechanics I	3
MECE-211	Engineering Measurements Lab (WI-PR)	2
	General Education - Global Perspective	3
	General Education - Social Perspective	3
	General Education - Scientific Principles Perspective	3
	General Education - Immersion 1	3
Third Year		
EEEE-281	Circuits I	3
MECE-305	Materials Science with Applications	3
MECE-306	Materials Science with Applications Laboratory	1
MECE-320	System Dynamics	3
MATH-326	Boundary Value Problems	3
MECE-499	Cooperative Education (fall, summer)	0
PHYS-212	University Physics II (General Education - Natural Science Inquiry Perspective)	4
Fourth Year		
MATH-241	Linear Algebra	3
MECE-301	Engineering Applications Laboratory	2
MECE-310	Heat Transfer I	3
MECE-348	Contemporary Issues	3
MECE-499	Cooperative Education (summer)	0
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
STAT-205	Applied Statistics	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	ME Extended Core Elective	3
	General Education - ME Approved Science Elective	3
	General Education - Immersion 2	3
	Open Elective	3
Fifth Year		
MECE-497	Multidisciplinary Sr. Design I	3
MECE-498	Multidisciplinary Sr. Design II	3
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
	Open Elective	3
	Applied Elective/Public Policy Electives	6
	Open Elective/Public Policy Elective	3
	General Education - Immersion 3	3
Choose one of the following:		6
PUBL-785	Capstone Research Experience	
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam plus 2 Graduate Electives	
Total Semester Credit Hours		**150**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The BS in mechanical engineering major is accredited by the Engineering Accreditation Commission of ABET. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of math is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science. Chemistry and physics are required.

Transfer Admission

Transfer course recommendations without associate degree

Pre-engineering courses such as calculus, calculus-based physics, chemistry, and liberal arts.

Appropriate associate degree programs for transfer

AS degree in engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Microelectronic Engineering, BS

www.rit.edu/study/microelectronic-engineering-bs
Karl Hirschman, Professor
585-475-5130, kdhemc@rit.edu

Program overview

Semiconductor and photonic devices impact virtually every aspect of human life, from communication, entertainment, and transportation, to health, solid-state lighting, and solar cells. There is an ever increasing need for talented engineers that not only understand the design of these amazing devices but can direct and optimize their fabrication. Microelectronic engineering is at the cutting edge of science education. Integrated nanoelectronic and microelectronic circuits and sensors drive our global economy, increase our productivity, and help improve our quality of life. RIT's microelectronic engineering degree is the only accredited bachelor of science degree of its kind in the U.S. and is considered a world leader in the education of semiconductor process engineers.

RIT's Microelectronic Engineering Degree

The worldwide semiconductor industry growing at an astounding pace. RIT's microelectronic engineering degree offers you an unparalleled opportunity to prepare for professional challenges and success in a leading, high-growth area of engineering.

Your curriculum begins with introductory courses in microelectronic engineering and nanolithography (nanopatterning) for integrated circuits. In the first year, you'll build a solid foundation in mathematics, physics, and chemistry, and courses will cover important issues such as technology development, ethics, societal impact, and global perspectives. The fundamentals of statistics and their application in the design of experiments, semiconductor device physics and operation, and integrated circuit technology are covered in the second year.

The third year comprises the electrical engineering course work necessary for understanding semiconductor devices and integrated circuits. The fourth and fifth years are dedicated to optics, nanolithography systems and materials, semiconductor processing, professional electives, and a two-course capstone senior project.

Modern, Hands-On Labs: You will gain hands-on experience in the design, fabrication, and testing of the integrated circuits (microchips), the vital component in almost every advanced electronic product manufactured today. RIT's undergraduate microelectronics engineering laboratories, which include modern integrated circuit fabrication (clean room) and test facilities, are among the best in the nation. At present, the major is supported by a 150mm complementary metal oxide semiconductor line equipped with diffusion; ion implantation, plasma, and chemical vapor deposition (CVD) processes; chemical mechanical planarization; and device design, modeling, and test laboratories. The microlithography facilities include a ASML i-line and GCA g-line wafer steppers, and both optical and electron beam mask writers.

Professional Electives: A choice of professional electives and the senior project offer you an opportunity to build a concentration in areas such as advanced CMOS, VLSI chip design, analog circuit design, electronic materials science, microelectromechanical systems (MEMS), or nanotechnology. Free elective courses allow you to develop an expertise in a related discipline.

Senior Capstone Project: In the capstone course, you'll propose and conduct individual research/design projects and present your work at the Annual Microelectronic Engineering Conference, which is organized by the department of electrical and microelectronic engineering and is well-attended by industrial representatives.

World-Class Faculty: Faculty committed to quality engineering educations, state-of-the-art laboratories, strong industrial support, co-op opportunities with national companies, and smaller class sizes make this one of the most value-added programs in the nation.

Learn more about the Student Learning Outcomes and Program Educational Objectives for the microelectronic engineering BS degree.

Semiconductor Jobs

One of the great challenges in integrated circuit manufacturing is the need to draw on scientific principles and engineering developments from such an extraordinarily wide range of disciplines. The design of microelectronic circuits requires a sound knowledge of electronics and circuit analysis. Optical lithography tools, which print microscopic patterns on wafers, represent one of the most advanced applications of the principles of Fourier optics. Plasma etching involves some of the most complex chemistry used in manufacturing today. Ion implantation draws upon understanding from research in high-energy physics. Thin films on semiconductor surfaces exhibit complex mechanical and electrical behavior that stretches our understanding of basic materials properties.

Scientists and engineers who work in the semiconductor field need a broad understanding of and the ability to seek out, integrate, and use ideas from many disciplines. The major provides the broad interdisciplinary background in electrical and computer engineering, solid-state electronics, physics, chemistry, materials science, optics, and applied math and statistics necessary for success in the semiconductor industry.

Engineering vs. Engineering Technology

Two dynamic areas of study, both with outstanding outcomes rates. Which do you choose?

What's the difference between engineering and engineering technology? It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering vs. engineering technology is more about identifying what you like to do and how you like to do it.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings

while you make valuable connections between classwork and real-world applications.

Students in the microelectronic engineering degree are required to complete four blocks (48 weeks) of cooperative education. Co-ops may begin after the second year of study. Students find co-op employment in the semiconductor and nanofabrication industries, and in areas such as nanotechnology, microelectromechanical systems, photonics, photovoltaics, and microsystems. Students complete co-ops at some of the world's leading electronics companies, including Intel, Samsung, Texas Instruments, and Motorola.

Curriculum

Microelectronic Engineering, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education)	3
CMPR-271	Computational Problem Solving for Engineers (General Education)	3
EEEE-120	Digital Systems I	3
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
MCEE-101	Introduction to Nanoelectronics	1
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
UWRT-150	First Year Writing: FYW: Writing Seminar (WI) (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Elective	3
Second Year		
EEEE-281	Circuits I	3
EEEE-281R	Circuits I Recitation	0
EEEE-282	Circuits II	3
EGEN-99	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus (General Education)	4
MATH-231	Differential Equations (General Education)	3
MCEE-201	IC Technology	3
MCEE-205	Statistics and Design of Experiments (General Education)	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective: Restricted STEM Elective	3
Third Year		
EEEE-380	Digital Electronics	3
MCEE-320	E&M Fields for Microelectronics	3
MCEE-260	Introduction to Semiconductor Devices	3
MCEE-499	Microelectronic Engineering Co-op (fall and summer)	0
MCEE-502	Semiconductor Process Integration	3
	General Education – Immersion	3
Fourth Year		
EEEE-353	Linear Systems	4
EEEE-480	Analog Electronics	4
MCEE-499	Microelectronic Engineering Co-op (spring and summer)	0
MCEE-503	Thin Films (WI-PR)	3
MCEE-505	Lithography Materials and Processes	3
	General Education – Immersion	3
Fifth Year		
MCEE-495	Senior Design I	3
MCEE-496	Senior Design II	3
MCEE-550	CMOS Processing	4
	General Education – Immersion	3
	Open Electives	9
	Professional Electives	9
Total Semester Credit Hours		**129**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Microelectronic Engineering, BS degree/ Materials Science and Engineering, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Elective)	3
CMPR-271	Computational Problem Solving for Engineers (General Education – Elective)	3
EEEE-120	Digital Systems I	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MCEE-101	Introduction to Nanoelectronics	1
PHYS-211	University Physics I (General Education – Scientific Principles Perspective)	4
UWRT-150	General Education - First Year Writing: FYW: Writing Seminar (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education - Elective	3
Second Year		
EEEE-281	Circuits I	3
EEEE-282	Circuits II	3
EGEN-99	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus (General Education – Elective)	4
MATH-231	Differential Equations (General Education – Elective)	3
MCEE-201	IC Technology	3
MCEE-205	Statistics and Design of Experiments (General Education – Elective)	3
PHYS-212	University Physics II (General Education – Natural Science Inquiry Perspective)	4
	Restricted STEM Elective†	3
	General Education – Social Perspective	3
	General Education – Global Perspective	3
Third Year		
MCEE-320	E&M Fields for Microelectronics	3
MCEE-360	Semiconductor Devices for Microelectronic Engineers	3
EEEE-380	Digital Electronics	3
MCEE-499	Microelectronic Engineering Co-op (fall, summer)	0
MCEE-502	Semiconductor Process Integration	3
	General Education – Immersion 1	3
Fourth Year		
EEEE-353	Linear Systems	4
EEEE-480	Analog Electronics	4
MCEE-505	Lithography Materials and Processes	3
MCEE-603	Thin Films (WI-PR)	3
MTSE-601	Materials Science	3
MTSE-704	Theoretical Methods in Materials Science and Engineering	3
MTSE-705	Experimental Techniques	3
Choose one of the following:		3
MTSE-790	Research & Thesis	
MTSE-777	Graduate Project	
	General Education – Immersion 2, 3	6
	MTSE Graduate Elective	3
Fifth Year		
MCEE-495	Senior Design I	3
MCEE-496	Senior Design II	3
MCEE-550	CMOS Processing	4
Choose one of the following:		6
MTSE-790	Research & Thesis	
	MTSE Graduate Electives	
	Professional Electives (Graduate courses)	9
	Open Electives	9
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Courses for the restricted STEM elective include: PHYS-213 (Modern Physics I), MATH-241 (Linear Algebra), MATH-251 (Probability and Statistics I), CHMG-142 (General & Analytic Chemistry II), CHMG-201 (Introduction to Organic Polymer Technology), BIOG-140 (Cell and Molecular Biology for Engineers I).

Microelectronic Engineering, BS degree/Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers	3
CMPR-271	Computational Problem Solving for Engineers	3
EEEE-120	Digital Systems I	3
MATH-181	Calculus I (General Education - Mathematical Perspective A)	4
MATH-182	Calculus II (General Education - Mathematical Perspective B)	4
MCEE-101	Introduction to Nanoelectronics	1
PHYS-211	University Physics I (General Education - Scientific Principles Perspective)	4
YOPS-010	RIT 365: RIT Connections	0
UWRT-150	General Education - First Year Writing: FYW: Writing Seminar (WI)	3
	General Education - Ethical Perspective	3
	General Education - Artistic Perspective	3
	General Education Elective	3
Second Year		
EEEE-281	Circuits I	3
EEEE-281R	Circuits I Recitation	0
EEEE-282	Circuits II	3
EGEN-099	Engineering Co-op Preparation	0
MATH-221	Multivariable and Vector Calculus	4
MATH-231	Differential Equations	3
MCEE-201	IC Technology	3
MCEE-205	Statistics and Design of Experiments	3
PHYS-212	University Physics II (General Education - Natural Science Inquiry Perspective)	4
	General Education - Global Perspective	3
	General Education - Social Perspective	3
	Restricted STEM Elective	3
Third Year		
EEEE-260	Introduction to Semiconductor Devices	3
EEEE-380	Digital Electronics	3
MCEE-320	E&M Fields for Microelectronics	3
MCEE-499	Microelectronic Engineering Co-op (fall, summer)	0
MCEE-502	Semiconductor Process Integration	3
	General Education - Immersion 1	3
	Open Elective	3
Fourth Year		
EEEE-353	Linear Systems	4
EEEE-480	Analog Electronics	4
MCEE-499	Microelectronic Engineering Co-op (summer)	0
MCEE-503	Thin Films	3
MCEE-505	Lithography Materials and Processes	3
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
	Graduate Professional Electives/Policy Electives	6
	General Education - Immersion 2	3
	Open Elective	3
Fifth Year		
EEEE-496	Senior Design II	3
MCEE-495	Senior Design I	3
MCEE-550	CMOS Processing	4
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	Graduate Public Policy Elective	3
	Professional Elective	3
	General Education - Immersion 3	3
Choose one of the following:		6
PUBL-785	Capstone Research Experience	
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam plus 2 Graduate Electives	
Total Semester Credit Hours		**150**

Please see General Education Curriculum for more information.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The BS in microelectronic engineering major is accredited by the EAC Accreditation Commission of ABET, http://www.abet.org. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of math is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science. Chemistry and physics are required.

Transfer Admission

Transfer course recommendations without associate degree

Pre-engineering courses such as calculus, calculus-based physics, chemistry, and liberal arts.

Appropriate associate degree programs for transfer

AS degree in engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Faculty

Dean's Office

Doreen Edwards, BS, South Dakota School of Mines and Technology; Ph.D., Northwestern University—Dean; Professor

Edward Hensel, BS, Clarkson University; Ph.D., New Mexico State University—Associate Dean of Graduate Studies

Matthew M. Marshall, BS, Rochester Institute of Technology; MS, Ph.D., University of Michigan—Associate Dean of Undergraduate Studies

Biomedical Engineering

Steven Day, BS, Ph.D., University of Virginia; Diploma, von Karman Institute for Fluid Mechanics (Belgium)—Department Head; Professor

Vinay Abhyankar, BS, Binghamton University; MS, Ph.D., University of Wisconsin-Madison—Assistant Professor

Iris Asllani, B.Sc., Nuclear Physics, University of Tirana (Albania); M.Sc., Ph.D., University of Washington—Associate Research Professor

Jennifer Bailey, BS, Ph.D., Purdue University—Undergraduate Program Director; Principal Lecturer

Edward E. Brown Jr., BS, University of Pennsylvania; MS, Ph.D., Vanderbilt University—Associate Professor

Thomas Gaborski, BS, Cornell University; MS, Ph.D., University of Rochester—Professor

Blanca Lapizco-Encinas, BS, Instituto Tecnologico de Sonora (Mexico); MS, Instituto Tecnologico de Celaya (Mexico); Ph.D., University of Cincinnati—Professor

Cristian Linte, BS, University of Windsor (Canada); MS, Ph.D., University of Western Ontario (Canada)—Associate Professor

Travis Meyer, BE, Vanderbilt University; Ph.D., Georgia Institute of Technology—Lecturer

Daniel B. Phillips, BS, State University of New York at Buffalo; MS, Ph.D., University of Rochester—Associate Professor

Michael Richards, BS, University of Rochester; Ph.D., Boston University—Assistant Professor

Iris V. Rivero, BS, MS, Ph.D., Pennsylvania State University—Kate Gleason Professor

Cory Stiehl, BS, University of Rochester; Ph.D., University of Massachusetts, Amherst—Senior Lecturer

Karin Wuertz, BS, MS, University of Regensburg (Germany); MBA, University of Cumbria (United Kingdom); Ph.D., University of Ulm (Germany)—Kate Gleason Professor

Zhi (Jenny) Zheng, BS, Xidian University (China); MS, Ph.D., Vanderbilt University—Assistant Professor

Chemical Engineering

Brian J. Landi, BS, MS, Ph.D., Rochester Institute of Technology—Department Head; Professor

Jairo A. Diaz, BSE, National University of Columbia (Columbia); Ph.D., Purdue University—Assistant Professor

Matt Ganter, BS, St. John Fisher College; MS, Ph.D., Rochester Institute of Technology—Assistant Research Professor

Nicole Hill, BS, Ph.D., Rochester Institute of Technology—Visiting Lecturer

Karuna Koppula, B.Tech., Andhra University (India); MS, University of New Hampshire; Ph.D., Michigan State University—Principal Lecturer

Brian J. Landi, BS, MS, Ph.D., Rochester Institute of Technology—Professor

Poornima Padmanabhan, B.Tech., Indian Institute of Technology (India); Ph.D., Cornell University—Assistant Professor

Alexander D. Roth, BS, ME, Cornell University; MS, The Ohio State University; Ph.D., Cleveland State University—Lecturer

Patricia Taboada-Serrano, BS, Mayor de San Andres University (Bolivia); MS, Simon Bolivar University (Venezuela); Ph.D., Georgia Institute of Technology—Associate Professor

Xiangcheng Sun, BE, Harbin Institute of Technology; MS, University of Chinese Academy of Sciences (China); Ph.D., University of Connecticut—Assistant Professor

Obioma Uche, BS, University of California, Berkeley; MS, Ph.D., Princeton University—Assistant Professor

Steven J. Weinstein, BS, University of Rochester; MS, Ph.D., University of Pennsylvania—Professor

Computer Engineering

Amlan Ganguly, BTech., Indian Institute of Technology (India); MS, Ph.D., Washington State University—Department Head; Professor

Andrés Kwasinski, M.Sc., Ph.D., University of Maryland at College Park—Professor

Dongfang Liu, Ph.D., Purdue University—Assistant Professor

Sonia Lopez Alarcon, B.Sc., Ph.D., Complutense University of Madrid (Spain)—Associate Professor

Alexander C. Loui, B.Sc., M.Sc., Ph.D., University of Toronto (Canada)—Professor of Practice

Marcin Lukowiak, BS, MS, Ph.D., Poznan University (Poland)—Professor

Roy W. Melton, BEE, MS, Ph.D., Georgia Institute of Technology—Principal Lecturer

Cory Merkel, BS, MS, Ph.D., Rochester Institute of Technology—Assistant Professor

Andreas E. Savakis, B.Sc., MS, Old Dominion University; Ph.D., North Carolina State University—Professor

Muhammad E. Shaaban, BS, MS, University of Petroleum and Minerals (Saudi Arabia); Ph.D., University of Southern California—Associate Professor

Shanchieh J. Yang, B.Sc., National Chiao-Tung University (Taiwan); MS, Ph.D., University of Texas at Austin—Professor

Michael Zuzak, BS, MS, Ph.D., University of Maryland at College Park—Assistant Professor

Electrical and Microelectronic Engineering

Ferat Sahin, BS, Istanbul Technical University (Turkey); MS, Ph.D., Virginia Polytechnic Institute and State University—Department Head; Professor

Mustafa A. G. Abushagur, BS, Tripoli University (Libya); MS, Ph.D., California Institute of Technology—Professor

Carlos Barrios, BS, MS Rochester Institute of Technology—Lecturer

David A. Borkholder, BS, Rochester Institute of Technology; MS, Ph.D., Stanford University—Professor

Tejasvi Das, MS, Ph.D., Rochester Institute of Technology—Associate Professor

Sohail A. Dianat, BS, Aria-Mehr University of Technology (Iran); MS, Ph.D., George Washington University—Professor

Lynn F. Fuller, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York at Buffalo—Professor Emeritus

Jamison Heard, BS, University of Evansville; MS, Ph.D., Vanderbilt University—Assistant Professor

Karl D. Hirschman, BS, MS, Rochester Institute of Technology; Ph.D., University of Rochester—Associate Department Head, Microelectronic Engineering Programs; Director, Semiconductor and Microsystems Fabrication Laboratory; Micron Professor

Christopher R. Hoople, BS, Union College; Ph.D., Cornell University—Senior Lecturer

Jason Hoople, BS, MS, Rochester Institute of Technology; Ph.D., Cornell University—Lecturer

Mark Indovina, MS, Rochester Institute of Technology— Director of Outreach and Facilities; Senior Lecturer

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Sunwoong Kim, BS, MS, Ph.D., Seoul National University (South Korea)—Assistant Professor

Santosh K. Kurinec, BS, MS, Ph.D., University of Delhi (India)—Professor

Sergey E. Lyshevski, MS, Ph.D., Kiev Polytechnic Institute (Ukraine)—Professor

James E. Moon, BS, Carnegie Mellon University; MBA, University of Rochester; MS, Ph.D., University of California at Berkeley—Professor

Parsian Katal Mohseni, BS, Ph.D., McMaster University (Canada)—Associate Professor

Dorin Patru, BS, MS, Technical University of Cluj-Napoca (Romania); Ph.D., Washington State University—Associate Professor

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Stefan Preble, BS, Rochester Institute of Technology; Ph.D., Cornell University—Professor

Ivan Puchades, BS, MS, Ph.D., Rochester Institute of Technology—Associate Professor

Majid Rabbani, BS, Aria-Mehr University of Technology (Iran); MS, Ph.D., University of Wisconsin-Madison—Professor of Practice

Sean L. Rommel, BS, Ph.D., University of Delaware—Professor

Eli Saber, BS, State University of New York at Buffalo; MS, Ph.D., University of Rochester—Professor

Gill R. Tsouri, B.Sc., M.Sc., Ph.D., Ben-Gurion University (Israel)—Professor

Alireza Vahid, B.S.c, Sharif University of Technology (Iran); M.S.c., Ph.D., Cornell University—Associate Professor

Jayanti Venkataraman, BS, MS, Bangalore University (India); Ph.D., Indian Institute of Science (India)—Associate Department Head, Electrical Engineering Programs; Professor

Bing Yan, BS, Renmin University of China (China); MS, Ph.D., University of Connecticut—Assistant Professor

Jing Zhang, BS, Huazhong University (China); Ph.D., Lehigh University—Associate Professor

Industrial and Systems Engineering

Iris V. Rivero, BS, MS, Ph.D., Pennsylvania State University—Department Head, Kate Gleason Professor

Nasibeh Azadeh Fard, BS, Iran University of Science and Technology, MS, Ph.D., Virginia Polytechnic Institute and State University—Assistant Professor

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Patricia A. Cyr, BS, University of Pittsburgh; MS, Rochester Institute of Technology—Senior Lecturer

Anthony DiVasta, BS, MS, Rochester Institute of Technology—Lecturer

Michael E. Kuhl, BS, Bradley University; MS, Ph.D., North Carolina State University—Professor

Rui Liu, BS, Beijing University (China); MS, Northeastern University; Ph.D., Georgia Institute of Technology—Assistant Professor

Katie McConky, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York at Buffalo—Associate Professor

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Esa M. Rantanen, BS, MS, EmbryRiddle Aeronautical University; MS, Ph.D., Pennsylvania State University—Associate Professor

Ehsan Rashedi, BS, MS, Sharif University of Technology (Iran); MS, Ph.D., Virginia Polytechnic Institute and State University—Assistant Professor

David Trauernicht, BS, Southern Illinois University Edwardsville; Ph.D., University of Illinois Urbana-Champaign—Research Professor

Yunbo "Will" Zhang, BS, Shandong University; MS, Huazhong University of Science & Technology; Ph.D., The Chinese Univeristy of Hong Kong—Assistant Professor

Mechanical Engineering

Risa J. Robinson, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York at Buffalo—Department Head; Professor

Margaret B. Bailey, BS, Pennsylvania State University; Ph.D., University of Colorado at Boulder; PE—Senior Faculty Associate to the Provost for ADVANCE; Professor

Stephen Boedo, BA, State University of New York at Buffalo; MS, Ph.D., Cornell University—Professor

Robert Carter, BS, University of Maine; Ph.D., Cornell University—Associate Department Head; Senior Lecturer

Anthony Chirico, BS, University at Buffalo; MS, Rochester Institute of Technology—Senior Lecturer

Agamemnon L. Crassidis, BS, MS, Ph.D., State University of New York at Buffalo—Professor

Steven Day, BS, Ph.D., University of Virginia—Professor

Elizabeth A. DeBartolo, BS, Duke University; MS, Ph.D., Purdue University—Director, Multidisciplinary Senior Design; Associate Professor

Ghazal Dehghani, BS, Sharif University of Technology (Iran); MS, University of Arizona—Visiting Lecturer

Amy Engelbrecht-Wiggans, BS, University of Illinois; Ph.D., Cornell University—Assistant Professor

Bernhard Fischer, MS, Technical University of Munich (Germany); Ph.D., Cranfield Institute of Technology (United Kingdom)—Lecturer

Gerald W. Fly, BS, MS, Massachusetts Institute of Technology—Lecturer

Alfonso Fuentes-Aznar, MS, University of Murcia (Spain); Ph.D., National University of Distance Education (Spain)—Associate Professor

Hany A. Ghoneim, BS, MS, Cairo University (Egypt); Ph.D., Rutgers University—Professor

Amitabha Ghosh, B.Tech., M.Tech., Indian Institute of Technology (India); Ph.D., Mississippi State University—Professor

Mario W. Gomes, BsE, Cornell University; MS, Georgia Institute of Technology; Ph.D., Cornell University—Senior Lecturer

Surendra K. Gupta, B.Tech., Indian Institute of Technology (India); MS, University of Notre Dame; Ph.D., University of Rochester—Professor

Edward C. Hensel, BS, Clarkson University; Ph.D., New Mexico State University—Professor; PE

William A. Humphrey, BS, MS, Case Western Reserve University—Senior Lecturer

Phillip Hutton, BS, University of Pittsburgh; MS, Old Dominion University; MS, Carnegie Mellon University; Ph.D., University of North Dakota—Lecturer

Patricia Iglesias Victoria, BS, Ph.D., Polytechnic University of Cartagena (Spain)—Associate Professor

Sarilyn Ivancic, BS, MS, Ph.D., University of Rochester—Graduate Program Director; Senior Lecturer

Satish G. Kandlikar, BE, Marathwada University (India); M.Tech., Ph.D., Indian Institute of Technology (India)—James E. Gleason Professor

Jason R. Kolodziej, BS, MS, Ph.D., State University of New York at Buffalo—Associate Professor

Margaretha J. Lam, BS, MS, State University of New York at Buffalo; Ph.D., Virginia Polytechnic Institute and State University—Undergraduate Program Director; Principal Lecturer

Kathleen Lamkin-Kennard, BS, Worcester Polytechnic Institute; MS, Ph.D., Drexel University—Associate Professor

Timothy P. Landschoot, BS, MS, Rochester Institute of Technology; MBA, University of Rochester—Principal Lecturer

Kate Leipold, BS, MS, Rochester Institute of Technology—Principal Lecturer

Rui Liu, BS, Beijing University (China); MS, Northeastern University; Ph.D., Georgia Institute of Technology—Assistant Professor

Ali Ogut, B.Ch.E., Hacettepe University (Turkey); MS, Ph.D., University of Maryland—Professor

Isaac Perez-Raya, BS, University of Guanajuato (Mexico); Ph.D., Rochester Institute of Technology —Assistant Professor

Howard Qingsong Tu, BS/MS, Beijing Institute of Technology (China);Ph.D., University of California Berkeley—Assistant Professor

Michael Schertzer, BS, MS, McMaster University (Canada); Ph.D., University of Toronto (Canada)—Associate Professor

Michael Schrlau, BS, University of Pittsburgh; Ph.D., University of Pennsylvania—Associate Professor

Robert J. Stevens, BS, Swarthmore College; MS, North Carolina State University; Ph.D., University of Virginia—Associate Professor

John D. Wellin, BS, Rochester Institute of Technology; MS, University of Rochester—Senior Lecturer

Qian Xue, MS, Southeast University; Ph.D., The John Hopkins University—Associate Professor

Xudong Zheng, Ph.D., George Washington University—Associate Professor

Distinguished Professorships

James E. Gleason Professorship in Mechanical Engineering

Established: 1967

Donor: Estate of James E. Gleason

Purpose: To provide a permanent memorial to Mr. James E. Gleason, who was president of Gleason Works from 1922-1947 and was awarded 36 patents for his many inventions in bevel gear design and manufacturing James E. Gleason served on the RIT Board of Trustees for 65 years (1899 until 1964), including 20 years as its chairman, and was an enthusiastic supporter of the relocation of RIT to the Henrietta campus. The professorship is targeted to strengthen RIT in the filed in which he received his education.

Held by: Satish G. Kandlikar

Kate Gleason Professorship

Established: 1999

Donor: Gleason Foundation

Purpose: To build upon the tradition of Kate Gleason as a role model for women in engineering by supporting the College's continuing commitment to diversity, its strategic goals and overall mission. Among her many notable achievements, Kate Gleason was the first woman admitted to study engineering at Cornell University, the first woman elected to full membership in the American Society of Mechanical Engineers, the first woman bank president in the US.

Held by: Jing Zhang, Iris Rivero, Karin Wuertz

Earl W. Brinkman Professor of Machining and Manufacturing

Established: 1995

Donor: Brinkman Family Charitable Trust and an anonymous foundation

Purpose: To support a professorship in engineering and create a lasting memorial to Earl W. Brinkman, an innovator and leader in the screw machine industry. Mr. Brinkman started in the industry at the age of 17, worked his way up the ranks to become Chief Engineer of the Davenport Machine Company in Rochester, N.Y., in 1937, and became president of the company from 1996 until his retirement in 1979, after devoting 53 years to the company.

Held by: Denis R. Cormier

Bausch and Lomb Endowed Chair in Microsystems Engineering

Established: 2007

Donor: Bausch and Lomb Foundation

Purpose: To support a professorship in Microsystems Engineering and aid in the development of microsystems technologies for health care and biomedical applications to enhance the quality of life for future generations.

Held by: David A. Borkholder

Micron Professorship in Microelectronic Engineering

Established: 2007

Purpose: As a global leader in the design, development, and fabrication of flash memory devices, Micron Corp. provides annual support for a faculty member, and related research and teaching activities, to enhance the body of knowledge in semiconductor fabrication technologies and manufacturing.

Held by: Karl D. Hirschman

College of Engineering Technology

S. Manian Ramkumar, Dean
www.rit.edu/engineeringtechnology

Programs of Study

Combined Accelerated Bachelor's/Master's Degree available

Accreditation

The following degree programs are accredited by the Engineering Technology Accreditation Commission of ABET (abet.org): civil engineering technology, computer engineering technology, electrical engineering technology, electrical/mechanical engineering technology, manufacturing engineering technology, and mechanical engineering technology.

The College of Engineering Technology provides programs that stress technology in a variety of environments and improve the careers of traditional and nontraditional students. Modern technology, whether in the development, integration, or implementation stages, is a focal point in each of the college's programs. This technology may be used to provide productive manufacturing and distribution of durable and consumable goods, the proper flow of information worldwide, the protection of the environment, or the enhancement of customer satisfaction in the service sector.

Through its dynamic program offerings, the college is committed to preparing graduates to be innovative, technologically advanced, and entrepreneurial. Degree programs are offered at the baccalaureate and master's degree levels. A number of minors are available. The college also includes the departments of military science (Army ROTC) and aerospace studies (Air Force ROTC), and the Center for Electronic Manufacturing Assembly (CEMA).

Please visit the college's website–**www.rit.edu/engineering-technology**–for in depth information on academics, admissions requirements, faculty, facilities, financial aid and scholsrships, research initiatives, advising services, and more.

Civil Engineering Technology, BS

www.rit.edu/study/civil-engineering-technology-bs
Amanda Bao, Associate Professor
585-475-4956, axbite@rit.edu

Program overview

When infrastructure works, no one notices. But when clean water fails to come out of faucets, when roads and bridges crumble, or when dams break and flood communities, suddenly our attention shifts to infrastructure and how its failure significantly impacts our lives.

The people who make infrastructure their top priority are civil engineers who are charged with analyzing problems and designing solutions to our nation's growing infrastructure needs. In RIT's civil engineering technology degree, you'll learn to design bridges and buildings, analyze traffic flow, manage the construction of complex structures, and address environmental issues such as clean drinking water and effective wastewater management.

RIT's Degree in Civil Engineering Technology

RIT's civil engineering technology degree supports the growing need for civil engineers to analyze, design, build, and retrofit new and existing infrastructure needs. There is also demand for civil engineers to develop and integrate modern technical innovations into their infrastructure solutions to address sustainable practices that are protective of the environment.

In the civil engineering technology major, you'll begin with a foundation in structural mechanics, physics, calculus, and the liberal arts. In the first two years of the program, technical subjects are taught concurrently with mathematics and science, helping you to understand applications while studying scientific fundamentals. The third and fourth years expand on these fundamentals with advanced course work in structural design, water and wastewater management and treatment, transportation systems, foundation engineering, and additional liberal arts courses. In the fifth year, you'll complete a capstone project that includes the complete design of a major civil engineering project.

With a choice of professional electives, you can complete course sequences in structural design, construction management, geotechnical engineering, transportation engineering, and water resources management. Electives also are available in other technical disciplines. The major allows you to specialize while also obtaining a broad background in civil engineering and construction management.

While an option is not required, you may choose to pursue one of three professional options to gain a deeper understanding in one of these areas:

- Construction management option–For students interested in the business, management, and project planning aspects related to construction, including sustainable building design.
- Structural design option–For students interested in structural design and the use of different types of materials (masonry, steel, reinforced concrete, etc.) in constructing roads, bridges, and buildings.
- Water resources option–For students interested in water treatment, wastewater treatment, hydrology, stormwater management, and the environment.

With four required cooperative education experiences, you'll gain full-time, hands-on career experience working for a range of companies and organizations in construction, transportation, water/wastewater management, renewable energy, and more. You'll gain the practical theory, knowledge, and hands-on technical skills you'll need to become an expert in applying today's technologies to the solution of civil engineering and construction problems.

Throughout the civil engineering degree, you'll spend time in labs where you'll use experimental methods to solve engineering challenges and actively put theory and technology to work. You'll work on state-of-the-art equipment and in sophisticated laboratories that allow for a wealth of hands-on experience. You'll have access to laboratories and equipment for soil mechanics, construction materials, surveying, water and wastewater analysis and treatment, hydraulic systems, and mechanics. You'll also have access to our Design and Drafting Laboratory with state-of-the-practice hardware and software such as AutoCAD, Revit, STAAD, HydroCAD, Civil3D, and much more.

With a BS degree in civil engineering technology, you'll also be prepared to take the Fundamentals of Engineering exam, the first step in becoming licensed as a professional engineer (PE).

Engineering vs. Engineering Technology

Two dynamic areas of study, both with outstanding outcomes rates. Which do you choose?

What's the difference between engineering and engineering technology? It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering vs. engineering technology is more about identifying what you like to do and how you like to do it.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the civil engineering technology degree are required to complete four co-op blocks. This typically includes one spring, one fall, and two summer blocks. You'll alternate periods of full-time study with full-time paid work experience in your career field. In some circumstances, other forms of experiential education (e.g., study abroad, research, military service) may be used to fulfill part of the co-op requirement. Each student is assigned a co-op advisor to assist in identifying and applying to co-op opportunities.

Careers in Civil Engineering Technology

Civil engineers are in demand. Our nation's growing infrastructure needs–coupled with a focus on addressing the environment as a key component in infrastructure solutions–have created ample career opportunities for civil engineers. And, with an exceptional outcomes rate, graduates of our degree in civil engineering technology are employed with top organizations in areas as diverse as environmental engineering, geotechnical engineering, engineering management, transportation engineering, water resources engineering, and more.

Civil Engineering Career Fair

RIT's Office of Career Services and Cooperative Education hosts a civil engineering career fair that connects civil engineering technology majors with employers in civil engineering, infrastructure, construction, and more. During this event, you'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Civil Engineering Technology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CVET-140	Materials of Construction	2
CVET-141	Materials of Construction Laboratory	1
CVET-150	Computer Aided Design and Drafting	2
CVET-180	Introduction to Civil Engineering	2
CVET-181	Introduction to Civil Engineering Lab	1
CVET-210	Statics	3
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
PHYS-111	College Physics I (General Education – Scientific Principles Perspective)	4
PHYS-112	College Physics II (General Education)	4
	General Education – First Year Writing (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
Second Year		
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CVET-160	Surveying	3
CVET-161	Surveying Laboratory	1
CVET-220	Strength of Materials	4
CVET-240	Elementary Soil Mechanics	3
CVET-241	Elementary Soil Mechanics Lab	1
MATH-211	Elements of Multivariable Calculus and Differential Equations (General Education)	3
MECA-436	Engineering Economics	2
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education - Elective	6
Third Year		
COMM-142	Introduction to Technical Communication (General Education)	3
CHMG-142	General & Analytical Chemistry	3
CVET-250	Hydraulics	3
CVET-251	Hydraulics Lab	1
CVET-300	Land Development Computer Applications	2
CVET-332	Structural Analysis and Modeling	4
CVET-499	Civil Engineering Technology Co-op (spring, summer)	0
ENGT-95	Career Seminar	0
Fourth Year		
CVET-431	Structural Steel Design	3
CVET-432	Reinforced Concrete Design	3
CVET-350	Highway Design	2
CVET-351	Highway Design Lab	2
CVET-437	Principles of Dynamics in Civil Engineering Technology	2
CVET-440	Foundation Engineering	3
CVET-450	Principles of Water and Wastewater Treatment	3
CVET-499	Civil Engineering Technology Co-op (summer)	0
	Open Elective	6
	General Education – Immersion 1, 2	6
	General Education – Social Perspective	3
Fifth Year		
CVET-499	Civil Engineering Technology Co-op (fall)	0
CVET-500	Civil Engineering Technology Capstone (WI-PR)	3
	Technical Elective	3
	Open Elective	3
	General Education – Elective	3
	General Education – Immersion	3
Total Semester Credit Hours		**128**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Professional Options

Students who elect to pursue a Professional Option may use any combination of Open and Technical Electives to complete one of the options listed below:

Construction Management

Choose two of the following:	
CVET-462	Construction Project Management
CVET-464	Construction Planning, Scheduling and Control
CVET-561	Construction Cost Analysis and Management
Choose one additional course from above or below:	
CVET-424	Building Information Modeling with Revit
CVET-465	Contracts and Specifications
CVET-505	Sustainable Building Design & Construction
ESHS-225	Construction Safety

Structural Design

Required Courses	
Choose three of the following:	
CVET-424	Building Information Modeling with Revit
CVET-433	Structural Timber Design
CVET-434	Design of Highway Bridges
CVET-435	Prestressed Concrete
CVET-436	Masonry Structures

Water Resources

Choose three of the following:	
CVET-423	GIS for CETEMS
CVET-451	Design of Water & Wastewater Treatment Facilities
CVET-452	Groundwater Hydraulics
CVET-453	Stormwater Management

Accreditation

The BS in civil engineering technology major is accredited by the Engineering Technology Accreditation Commission of ABET, https://www.abet.org. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in mathematics, science, engineering science, and engineering technology

Appropriate associate degree programs for transfer

Civil, construction, environmental, architectural, transportation, or surveying technology; engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Computer Engineering Technology, BS

www.rit.edu/study/computer-engineering-technology-bs
Jeanne Christman, Associate Professor
585-475-6609, jxciee@rit.edu

Program overview

RIT's Computer Engineering Technology Degree

The computer engineering technology major is designed to provide you with the skills to design embedded systems for a range of applications, such as:

- Medical diagnostic equipment
- Digital cameras
- Missile guidance systems
- Anti-lock brakes
- Autonomous vehicles
- Network routers
- Smartphones
- Small appliances

Computer engineering technology courses bridge the gap between hardware and software by providing a solid foundation in each and integrating them with intensive classroom and laboratory experiences.

From a software perspective you will:

- Gain experience in cutting-edge development with programming languages currently used in industry
- Immerse yourself in industry standards for application software development
- Understand the process for creating development application code
- Master state-of-the-art problem-solving techniques
- Utilize embedded "C" real-time operating systems programming

The hardware focus is on digital systems design and development. From low-level gate design to high-end microprocessors, you'll gain an architectural understanding of computer systems. The curriculum includes:

- In-depth design and analysis of combinational logic
- Sequential logic and state machines
- Micro-controller systems
- Microprocessor systems

You'll perform FPGA development and design in a hardware description language using industry-standard computer-aided engineering tools.

Elective courses may be used to pursue a four-course option in audio or telecommunications, or you may use electives to specialize in a particular area of industry or pursue a personal interest.

A Hands-On, Capstone Experience in Computer Engineering Technology

In the final year of the computer engineering technology major, you'll gain valuable hands-on experience through a two-course, two-semester capstone course. You will apply what you've learned throughout the program's curriculum and on your co-ops to a team-based project. The experience includes product ideation, project/resource management techniques, and best practices; system level specification, modeling, partition, and design; team collaboration and communication; documentation practices; industry level coding practices; hardware and software co-design methodologies; design reuse and intellectual property creation; design verification and validation; and design sign-off. The experience

models how project research, development, and design happens in industry. Past capstone projects have included the design and development of autonomous rovers and self-guided drones.

Furthering Your Education: Add a Master's Degree and Advance Your Career Faster

RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years, giving you a competitive advantage.

- +1 MBA: Students who enroll in a qualifying undergraduate degree may add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn more about the +1 MBA.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the computer engineering technology degree are required to complete four co-op blocks. This typically includes one spring, one fall, and two summer blocks. You'll alternate periods of full-time study on campus with full-time paid work experience in your career field.

Curriculum

Computer Engineering Technology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CPET-121	Computational Problem Solving	3
CPET-133	Introduction to Digital and Microcontroller Systems	3
EEET-115	Circuits I	3
EEET-116	Circuits I Lab	1
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
MCET-101	Fundamentals of Engineering	3
	General Education – First Year Writing (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
Second Year		
CPET-233	Digital Systems Design	3
CPET-253	Microcontroller Systems	3
EEET-125	Circuits II	3
EEET-126	Circuits II Lab	1
EEET-213	Electronic Devices	3
MATH-211	Elements of Multivariable Calculus and Differential Equations (General Education)	3
PHYS-111	College Physics I (General Education – Scientific Principles Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Math/Science Elective	3
	General Education – Natural Science Inquiry Perspective	4
Third Year		
CPET-281	Networking Technologies	3
CPET-321	Computational Problem Solving II (General Education)	3
CPET-499	Cooperative Education – Computer Engineering Technology (spring and summer)	0
EEET-299	EET Career Orientation	1
EEET-331	Signals, Systems and Transforms	3
EEET-332	Signals, Systems & Transforms Lab	1
STAT-145	General Education – Elective: Introduction to Statistics I	3
	General Education – Immersion 1	3
Fourth Year		
CPET-343	Hardware Description Language	3
CPET-461	Real Time Operating Systems	3
CPET-499	Computer Engineering Technology (summer) (Cooperative Education)	0
CPET-561	Embedded Systems Design I	4
EEET-425	Digital Signal Processing (WI-PR)	4
	General Education – Immersion 2, 3	6
	Technical Electives	3
	Open Electives	9
Fifth Year		
CPET-499	Cooperative Education – Computer Engineering Technology (fall)	0
CPET-563	Embedded Systems Design II	3
	General Education – Elective	4
	Open Elective	3
	Technical Elective	3
Total Semester Credit Hours		**126**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Options

Students who elect to pursue a degree option may use any combination of Open and Technical Electives to complete one of the options listed below:

Audio

EEET-261	Fundamentals of Audio Engineering
EEET-361	Modern Audio Production
Choose two of the following:	
CPET-421	Applied Audio Programming
EEET-451	3D Audio: Theory and Practice
EEET-461	Introduction to Acoustics
EEET-561	Audio Power Amplifier

Telecommunications

CPET-281	Networking Technologies
CPET-515	Converged Network Concepts
EEET-313	Communications Electronics
EEET-551	Wireless Communications

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Computer Engineering Technology, BS degree/ Computer science, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CPET-121	Computational Problem Solving I (General Education)	3
CPET-133	Introduction to Digital and Microcontroller Systems	3
EEET-115	Circuits I	3
EEET-116	Circuits I Lab	1
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
MCET-101	Fundamentals of Engineering	3
UWRT-150	Writing Seminar (WI) (General Education – First Year Writing: FYW)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
Second Year		
CPET-233	Digital Systems Design	3
CPET-253	Microcontrollers Systems	3
EEET-125	Circuits II	3
EEET-126	Circuits II Lab	1
EEET-213	Electronic Devices	3
MATH-211	Elements of Multivariable Calculus and Differential Equations (General Education)	3
PHYS-111	College Physics I (General Education – Scientific Principles Perspective)	4
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Math/Science Elective	3
	General Education – Natural Science Inquiry Perspective	4
Third Year		
CPET-281	Networking Technologies	3
CPET-321	Computational Problem Solving II (General Education)	3
CPET-499	Cooperative Education – Computer Engineering Technology (spring/summer)	0
EEET-299	EET Career Orientation	1
EEET-331	Signals, Systems and Transforms	3
EEET-332	Signals, Systems and Transforms Lab	1
STAT-145	Introduction to Statistics I (General Education)	3
	General Education – Immersion 1	3
Fourth Year		
CPET-343	Hardware Description Language	3
CPET-461	Real Time Operating Systems	3
CPET-499	Cooperative Education: Computer Engineering Technology (summer)	0
CPET-561	Embedded Systems Design I	4
CSCI-665	Foundations of Algorithms	3
EEET-425	Digital Signal Processing (WI-PR)	4
	General Education – Immersion 2, 3	6
	Open Elective	9
Fifth Year		
CPET-499	Cooperative Education – Computer Engineering Technology (fall)	0
CPET-563	Embedded Systems Design II	3
	Open Elective	3
	Technical Elective	3
	General Education – Elective	4
Sixth Year		
CSCI-610	Fundamentals of Computer Graphics	3
CSCI-630	Foundations of Artificial Intelligence	3
CSCI-631	Foundations of Computer Vision	3
CSCI-790	Computer Science MS Thesis	6
CSCI-799	Computer Science Graduate Independent Study	6
Total Semester Credit Hours		**147**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The BS in computer engineering technology major is accredited by the Engineering Technology Accreditation Commission of ABET, https://www.abet.org. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in computer science, math, science, engineering science, and engineering technology

Appropriate associate degree programs for transfer

Computer technology, electrical or electronic technology, or computer science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Electrical Engineering Technology, BS

www.rit.edu/study/electrical-engineering-technology-bs

James Lee, Associate Professor
585-475-2899, jhleme@rit.edu

Program overview

Electrical engineering technology is designed to meet industry's ever-increasing need for engineers with an in-depth understanding of electrical and electronics theory. The degree provides students with the ability to specialize in specific areas of the discipline. Graduates work as engineers in a variety of industries including automotive, medical devices, power and energy, audio, telecommunications, and more.

RIT's Electrical Engineering Technology Degree

The BS in electrical engineering technology degree provides students with a foundation in circuits, analog, and digital electronics, physics, and calculus. The third and fourth years expand on fundamental courses with more advanced courses in advanced circuits and electronics, transform methods, control systems, analog, and digital electronics, and applied differential equations. Students are able to choose from multiple electives to round out their degree. Electives include sequences in power systems, electronic communications, embedded systems, telecommunications, networking, and optics. Electives are also available in other technical disciplines, and the student's academic advisor can assist in determining the best choices to meet career goals and objectives. The major provides a viable option for students who have already completed an associate degree and wish to complete a bachelor of science degree.

Core courses are introduced in the first year of study to provide students with a solid foundation in circuits, analog and digital electronics, computer programming, and calculus. The curriculum expands in later years to feature advanced study in advanced circuits and electronics, transform methods, control systems, analog, and digital electronics, and applied differential equations. Elective courses enable students to choose from a wide range of course options to further enhance their program of study and prepare them to archive their career goals. The major provides a viable option for students who have already completed an associate degree and wish to complete a bachelor of science degree.

A solid foundation in math, science, and the liberal arts, coupled with specialization in students' particular areas of interest prepares graduates to immediately enter the workforce as design engineers or pursue advanced degrees. Electrical engineering technology majors will gain in-depth knowledge and a breadth of experience that inspire them to pursue successful careers in their chosen professional field and embark on a path of lifelong learning.

Students will also complete required cooperative education experiences designed to provide real, hands-on engineering experience in industry.

Electrical Engineering Technology Program Options

Students who wish to specialize in a particular area of industry, or those who desire to pursue a personal interest, may elect to use electives to complete a four-course option in audio or telecommunications.

Engineering vs. Engineering Technology

Two dynamic areas of study, both with outstanding outcomes rates. Which do you choose?

What's the difference between engineering and engineering technology? It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering vs. engineering technology is more about identifying what you like to do and how you like to do it.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the electrical engineering technology degree are required to complete four co-op blocks. This typically includes one spring, one fall, and two summer blocks. You'll alternate periods of full-time study with full-time paid work experience in your career field. In some circumstances, other forms of experiential education (e.g., study abroad, research, military service) may be used to fulfill part of the co-op requirement. Each student is assigned a co-op advisor to assist in identifying and applying to co-op opportunities.

Curriculum

Electrical Engineering Technology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CPET-121	Computational Problem Solving I (General Education)	3
CPET-133	Introduction to Digital and Microcontroller Systems	3
EEET-115	Circuits I	3
EEET-116	Circuits I Lab	1
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
MCET-101	Fundamentals of Engineering	3
	General Education – First Year Writing: FYW (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Elective	3
Second Year		
CPET-233	Digital Systems Design	3
CPET-253	Microcontroller Systems	3
EEET-125	Circuits II	3
EEET-126	Circuits II Lab	1
EEET-213	Electronic Devices	3
EEET-299	EET Career Orientation	1
MATH-211	Elements of Multivariable Calculus and Differential Equations (General Education)	3
PHYS-111	College Physics I (General Education – Scientific Principles Perspective)	4
	General Education- Global Perspective	3
	General Education – Social Perspective	3
	General Education - Math / Science Elective	3
	General Education – Natural Science Inquiry Perspective	4
Third Year		
EEET-223	Advanced Electronics	4
EEET-331	Signals, Systems and Transforms	3
EEET-332	Signals, Systems & Transforms Lab	1
EEET-499	Electrical Engineering Technology (spring, summer) (Cooperative Education)	0
STAT-145	Introduction to Statistics I (General Education)	3
	General Education – Immersion 1	3
	Open Elective	3
Fourth Year		
EEET-241	Electrical Machines and Transformers	2
EEET-242	Electrical Machines and Transformers	1
EEET-313	Communications Electronics	3
EEET-425	Digital Signal Processing (WI-PR)	4
EEET-427	Control Systems	4
EEET-499	Electrical Engineering Technology (summer) (Cooperative Education)	0
	General Education – Elective	3
	Technical Elective	3
	General Education – Immersion 2, 3	6
	Open Electives	6
Fifth Year		
EEET-433	Transmission Lines	3
EEET-499	Cooperative Education – Electrical Engineering Technology (fall)	0
	General Education – Elective	4
	Open Elective	3
	Technical Elective	3
Total Semester Credit Hours		**127**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Options

Students may elect to use any combination of Open and Technical Electives to complete the one of the options listed below:

Audio

EEET-261	Fundamentals of Audio Engineering
EEET-361	Modern Audio Production
Choose two of the following:	
CPET-421	Applied Audio Programming
EEET-451	3D Audio: Theory and Practice
EEET-461	Introduction to Acoustics
EEET-561	Audio Power Amplifiers

Telecommunications

CPET-281	Networking Technologies
EEET-313	Communication Electronics
CPET-515	Converged Network Concepts
EEET-551	Wireless Communications

Accreditation

The BS in electrical engineering technology major is accredited by the Engineering Technology Accreditation Commission of ABET, https://www.abet.org. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in mathematics, science, engineering science, and engineering technology

Appropriate associate degree programs for transfer

Electrical technology, electronic technology, engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Engineering Technology Exploration

www.rit.edu/study/engineering-technology-exploration
Mike Eastman, Professor
585-475-7787, mgeiee@rit.edu

Program overview

Engineering technology exploration is an exciting opportunity for you to explore all the College of Engineering Technology's academic majors to determine which one best meets your career aspirations. And, you have the freedom to explore early in your college career, so you can determine your interests before committing to a major.

What is Exploration?

The tech exploration program is designed to help you learn more about all the majors in the College of Engineering Technology, the courses you will take, and the career paths within each program. You can spend up to two semesters exploring and learning before you decide on a major. A key benefit of tech exploration is the freedom to identify your interests while remaining on track for graduation.

Is engineering technology exploration right for you? It's a great fit if you are:

- Inspired to tackle real-world problems facing society
- Passionate about engineering, science, technology, robotics, mechatronics, or manufacturing
- Seeking ways to help make contributions toward saving the environment
- Interested in exploring ways to keep employees safe, healthy, and productive on the job
- Looking for ways to combine your interests in technology, packaging science, and print and graphic media.
- Interested in continuing your career exploration before declaring a major

Exploring Majors

Throughout your time in the engineering technology program, you will learn about each of the college's nine majors while you complete foundational courses that apply to all engineering technology degrees in the college. This enables you to explore your options while working toward your degree.

You'll gain an in-depth understanding of each major through hands-on labs and projects. While developing foundational principles of engineering and applied science, you will learn about courses and career paths associated with each of our majors. This approach will help you identify which academic areas are most aligned with your career aspirations.

Which engineering technology degree will you explore?

- Civil Engineering Technology BS
- Computer Engineering Technology BS
- Electrical Engineering Technology BS
- Environmental Sustainability, Health and Safety BS
- Mechanical Engineering Technology BS
- Mechatronics Engineering Technology BS
- Packaging Science BS
- Print and Graphic Media Technology BSs
- Robotics and Manufacturing Engineering Technology BS

What is Engineering Technology?

Engineering technology majors focus on using scientific and engineering principles to implement new technologies. Those who choose a degree in engineering technology are typically interested in the application of innovative ideas and technologies to solve real-world problems.

What's the Difference Between Engineering and Engineering Technology?

It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing the right major in engineering or engineering technology is more about identifying what you like to do and how you like to do it.

Become Part of a Supportive and Encouraging Environment

In the College of Engineering Technology, you'll be surrounded by people who want to see you do well, who will offer you encouragement, moral support, and mentoring. You will feel challenged and grow from the exhilarating 'a-ha' moments while being involved in a community that is rooting for you and your success, just as you root for them and their success.

Curriculum

Engineering technology exploration, typical course sequence

COURSE		SEMESTER CREDIT HOURS
Fall Semester		
ENGT-110	College of Engineering Technology Exploration Seminar	1
MCET-101	Fundamentals of Engineering	3
	General Education-First Year Writing	3
	General Education Perspective	3
ACSC-010	Year One	0
YOPS-10	RIT365: RIT Connections	0
	Wellness Education*	0
Spring Semester		
Choose any three courses from the following majors:		9
	Electrical Engineering Technology	
	Mechanical Engineering Technology	
	Mechatronics Engineering Technology	
	Robotics and Manufacturing Engineering Technology	
	Computer Engineering Technology	
	Civil Engineering Technology	
	Environmental Sustainability, Health and Safety	
	Packaging Science	
	Print and Graphic Media Technology	
	General Education Perspective	6
Choose one of the following:		
MATH-161	Applied Calculus	4
MATH-171	Calculus A	3
PHYS-111	College Physics I (General Education)	4
Total Semester Credit Hours		**32**

Please see General Education Framework for more information.

* Please see Wellness Education Requirements for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Environmental Sustainability, Health and Safety, BS

www.rit.edu/study/environmental-sustainability-health-and-safety-bs
Josh Goldowitz, Professor
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Program overview

Environmental, health, and safety is a general term that refers to policies, laws, rules, regulations, careers, and efforts utilized by universities, school districts, local governments, companies, and environmental consulting groups to protect the health and safety of their employees and to ensure their activities do not harm the environment. It's an in-demand field, and top companies are seeking RIT graduates to fill roles that benefit employees, the environment, and the company.

RIT's BS in environmental sustainability, health, and safety is one dynamic degree with two robust areas of study. This major provides you with an in depth understanding of:

- Environmental Sustainability: Helping organizations (universities, school districts, counties, companies, environmental consulting groups, etc.) identify, implement, and champion efforts to make their products, processes, and industries cleaner and more environmentally friendly.
- Occupational Health and Safety: Protecting workers from hazards, accidents, illness, and harm while working in plants, product warehouses, and manufacturing facilities.

On the surface, these two disciplines may not seem interconnected but in reality, most organizations have dedicated teams comprised of professionals from both areas who work together to positively impact both people (the safety side) and the planet (the environmental side).

What is Environmental Sustainability?

Environmental sustainability is a responsibility to conserve natural resources and to protect the planet by making environmentally friendly decisions. Organizations employ sustainability professionals to help develop, implement, and monitor environmental strategies, policies, and programs that promote sustainable development. These include sustainable practices such as efficient water and wastewater management, limiting the use of harmful chemicals in products, using renewable energy sources to power facilities, reducing and eliminating the use of plastics and other non-biodegradable materials, managing deforestation, and more. Those that enact sustainable practices not only positively impact their employees and their communities, but these actions are long-term investments that reduce costs and operating expenses while supporting the environment.

What is Occupational Health and Safety?

Occupational health and safety focuses on making and keeping work spaces and operations safe for employees. This can include developing and implementing safety standards when using or working around equipment or toxic chemicals, evaluating the risk for and managing the prevention of workplace injury or illness, and educating employees on safety protocols and wellness practices. By maintaining a healthy workforce, organizations provide a safe work environment for their employees to do their jobs and they lessen the risk of injury or illness, which can negatively affect employee morale, production of products, seamless services, and output for an organization.

Environmental Health and Safety Courses

The environmental health and safety degree offers a comprehensive curriculum that pairs courses in environmental sustainability and occupational health and safety to provide you with a solid foundation in both areas of study. With professional electives built into the program, you can tailor your course work around the topics and career paths that interest you most.

Build Your Expertise with an Option

The environmental health and safety degree offers three options for you to further develop your understanding and expertise in a specialized area of study.

- Environmental Sustainability Option – Changing aspects of an organization's behavior can have positive effects on the environment including more sustainable agriculture, safer and more sustainable products, and remediation practices for contaminated environments. For instance, product manufacturers–those who manufacture everything from phones to food–face ethical, legal, and economic issues associated with supply chains, production, product use, and product end of life. In the environmental sustainability option, you will learn how sustainability informs all of these decisions and how to implement systems that lead to more sustainable outcomes.
- Health and Safety Option – In many companies, employees work in environments where they are exposed to electricity, fires and explosions, heat, chemicals, and complex machinery and robots. In this option, you'll learn to protect employees who work in some of the most hazardous occupations. Course work will help you analyze workplace dangers to estimate risks and determine the best ways to protect employees from hazards. You'll also learn how to empower workers to keep themselves safe.
- Surveying and Geospatial Analysis Option – This option focuses on geographical information systems and databases that provide information that aids in the safety of people and places. For example, when a fire department gets an emergency call, they turn to as GIS system. They input the address of the fire and the system provides fire fighters with the layout of a home, its proximity to fire hydrants, any overhead power or electrical lines, and other pertinent information that speeds response and decision-making time.

Furthering Your Education in Environmental Health and Safety

RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in five years of study, giving you a competitive advantage.

- Environmental Sustainability, Health and Safety BS/Environmental Health and Safety Management MS: In this combined accelerated dual degree, the BS degree in environmental health and safety provides you with knowledge and experience to make organizations more sustainable, more environmentally friendly, and safer. Then, in the environmental health and safety management master's degree you learn how to develop and implement an environmental, health, and safety management system, which enables companies to continually move towards sustainability and safety goals while conforming to national and international standards. You'll learn to identify and manage risk, and to formulate effective strategies for integrating EHS into the business government agency or organization to drive EHS and sustainability performance.
- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to enroll in the +1 MBA program by adding an MBA to their bachelor's degree after their first year of study.

In addition, many students have completed the environmental sustainability health and safety BS degree then advanced their education with a graduate degree from other top-tier universities including Massachusetts Institute of Technology, University of Pennsylvania, and Yale University.

Experiential Learning

Cooperative Education

Hands-On Experience = Real-World Skills

In our environmental health and safety degree you will complete four semesters of cooperative education. This will allow you to gain full-time, paid, hands-on experience in industry, government agencies, or environmental consulting companies as you work alongside professionals to learn how environmental sustainability practices and occupational health and safety policies directly affect the way organizations produce products, manage their facilities, balance resources, reduce illness and injury, and create safer work environments.

With the skills you gain both in and out of the classroom, you'll be in demand as a defender of environmentally sustainable processes and a champion of occupational health and safety policies.

Curriculum

Environmental Sustainability, Health and Safety, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-142	General & Analytical Chemistry II (General Education – Elective)	3
CHMG-146	General Education – Elective: General & Analytical Chemistry II Lab	1
ESHS-150	Principles of Environmental Sustainability, Health and Safety	3
ESHS-350	Greenhouse Gas Management	3
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
PHYS-111	College Physics I (General Education – Scientific Principles Perspective)	4
	General Education – First Year Writing: FYW (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
Second Year		
BIOL-101	General Biology I (General Education)	3
BIOL-103	General Biology I Lab (General Education)	1
ESHS-201	Environmental Monitoring and Measurement I	2
ESHS-210	Sustainable Earth Resources	3
ESHS-251	Environmental Monitoring and Measurement II	2
ESHS-290	Social Responsibility and Environmental Sustainability (WI-PR)	3
ESHS-300	Environmental, Health, and Safety Professional Communication	3
ESHS-310	Solid and Hazardous Waste Management	3
ESHS-320	Principles of Safety	3
ESHS-360	Sustainable World Water Supply	3
PHYS-112	General Education – Elective: College Physics II	4
Third Year		
ENGT-95	Career Seminar	0
ESHS-330	Industrial Wastewater Management	3
ESHS-499	ESHS Co-op (spring, summer)	0
ESHS-511	Environmental & Occupational Health	3
ESHS-512	Environmental & Occupational Health Lab	1
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	General Education – Elective	3
	General Education – Immersion 1	3
Fourth Year		
BIOL-102	General Biology II (General Education)	3
BIOL-104	General Biology II Lab (General Education)	1
ESHS-460	EHS Accident Causation and Prevention	3
ESHS-480	EHS Law	3
ESHS-499	ESHS Co-op (summer)	0
ESHS-525	Air Emissions Management	3
	Open Electives	6
	Professional Electives	6
	General Education – Immersion 2, 3	6
Fifth Year		
ESHS-499	ESHS Co-op (fall)	0
ESHS-515	Corporate EHS Management	3
ESHS-590	Capstone Project	3
	General Education – Social Perspective	3
	Open Electives	6
Total Semester Credit Hours		**126**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Options

Students who elect to pursue a Degree Option may use any combination of Open and Professional Electives to complete one of the options listed below:

Environmental Sustainability

Complete 9 credits from the following courses:	
ESHS-370	Sustainable Food Systems
ESHS-544	Remedial Investigation & Corrective Action
ESHS-565	Sustainable Product Stewardship

Occupational Health and Safety

Complete 9 credits from the following courses:	
ESHS-225	Construction Safety
ESHS-501	Fire Protection
ESHS-530	Mechanical and Electrical Safeguarding
ESHS-565	Sustainable Product Stewardship

Surveying and Geospatial Analysis

Complete 10 credits from the following courses:	
CVET-160	Surveying
CVET-161	Surveying Laboratory
CVET-423	GIS for CETEMS
IGME-382	Maps, Mapping and Geospatial Technologies

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Environmental Sustainability, Health and Safety, BS degree/Environmental Health and Safety Management, MS degree (project option), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Elective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Elective)	1
ESHS-150	Principles of Environmental Sustainability, Health and Safety	3
ESHS-350	Greenhouse Gas Management	3
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
PHYS-111	College Physics I (General Education – Scientific Principles Perspective)	4
UWRT-150	First-Year Writing (WI) (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Second Year		
BIOL-101	General Biology I (General Education – Elective)	3
BIOL-103	General Biology I Lab (General Education – Elective)	1
ENGT-95	Career Seminar	0
ESHS-201	Environmental Monitoring and Measurement I	2
ESHS-210	Sustainable Earth Resources	3
ESHS-251	Environmental Monitoring and Measurement II	2
ESHS-290	Social Responsibility and Environmental Sustainability (WI)	3
ESHS-300	Environmental, Health and Safety Professional Communication	3
ESHS-310	Solid and Hazardous Waste Management	3
ESHS-320	Principles of Safety	3
ESHS-360	Sustainable World Water Supply	3
ESHS-499	ESHS Co-op (summer)	0
PHYS-112	College Physics II (General Education – Elective)	4
Third Year		
BIOL-102	General Biology II (General Education – Elective)	3
BIOL-104	General Biology II Lab (General Education – Elective)	1
ESHS-330	Industrial Wastewater Management	3
ESHS-480	EHS Law	3
ESHS-499	ESHS Co-op (summer)	0
ESHS-511	Environmental & Occupational Health	3
ESHS-512	Environmental & Occupational Health Lab	1
ESHS-525	Air Emissions Management	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	General Education – Elective	3
	Open Elective	3
	General Education – Immersion 1, 2	6
Fourth Year		
ESHS-460	EHS Accident Causation and Prevention	3
ESHS-499	ESHS Co-op (summer)	0
ESHS-515	Corporate EHS Management	3
ESHS-720	Environmental, Health and Safety Management	3
GRCS-701	Research Methods	3
	Professional Elective	3
	General Education – Immersion 3	3
	General Education – Social Perspective	3
	Open Electives	9
Fifth Year		
ESHS-740	EHS Management System Design	3
ESHS-755	Corporate Social Responsibility	3
ESHS-760	Integrating EHS Management	3
ESHS-780	EHS Internal Auditing	3
ESHS-797	Graduate Project	6
	Professional Electives (Graduate)	6
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Environmental Sustainability, Health and Safety, BS degree/Environmental Health and Safety Management, MS degree (thesis option), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Elective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Elective)	1
ESHS-150	Principles of Environmental Sustainability, Health and Safety	3
ESHS-350	Greenhouse Gas Management	3
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
PHYS-111	General Education – Scientific Principles Perspective: College Physics I	4
UWRT-150	First-Year Writing (WI) (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Second Year		
BIOL-101	General Biology I (General Education – Elective)	3
BIOL-103	General Biology I Lab (General Education – Elective)	1
ENGT-95	Career Seminar	0
ESHS-201	Environmental Monitoring and Measurement I	2
ESHS-210	Sustainable Earth Resources	3
ESHS-251	Environmental Monitoring and Measurement II	2
ESHS-290	Social Responsibility and Environmental Sustainability (WI)	3
ESHS-300	Environmental, Health and Safety Professional Communication	3
ESHS-310	Solid and Hazardous Waste Management	3
ESHS-320	Principles of Safety	3
ESHS-360	Sustainable World Water Supply	3
ESHS-499	ESHS Co-op (summer)	0
PHYS-112	College Physics II (General Education – Elective)	4
Third Year		
BIOL-102	General Biology II (General Education – Elective)	3
BIOL-104	General Biology II Lab (General Education – Elective)	1
ESHS-330	Industrial Wastewater Management	3
ESHS-480	EHS Law	3
ESHS-499	ESHS Co-op (summer)	0
ESHS-511	Environmental & Occupational Health	3
ESHS-512	Environmental & Occupational Health Lab	1
ESHS-525	Air Emissions Management	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	General Education – Immersion 1, 2	6
	General Education – Elective	3
	Open Elective	3
Fourth Year		
ESHS-460	EHS Accident Causation and Prevention	3
ESHS-499	ESHS Co-op (summer)	0
ESHS-515	Corporate EHS Management	3
ESHS-720	Environmental, Health and Safety Management	3
GRCS-701	Research Methods	3
	General Education – Immersion 3	3
	General Education – Social Perspective	3
	Open Electives	9
	Professional Elective	3
Fifth Year		
ESHS-740	EHS Management System Design	3
ESHS-755	Corporate Social Responsibility	3
ESHS-760	Integrating EHS Management	3
ESHS-780	EHS Internal Auditing	3
ESHS-788	Thesis Planning	3
ESHS-790	Thesis	3
	Professional Electives (Graduate)	6
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Math through Calculus I, micro and macroeconomics, introductory courses in biology, chemistry, and physics

Appropriate associate degree programs for transfer

Biology, chemistry, or environmental sciences; business or public administration; liberal arts with math/science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Mechanical Engineering Technology, BS

www.rit.edu/study/mechanical-engineering-technology-bs
Beth Carle, Professor
5854756752, easmet@rit.edu

Program overview

From consumer products to high-performance automobiles, aerospace systems, bioengineered devices, and energy technologies, mechanical engineering technology has an enormous influence on our society. Understanding how products and machinery work, as well as how to design, manufacture, or use technology to develop mechanical systems is the focus of RIT's mechanical engineering technology degree.

Mechanical engineering technology involves understanding how products and machinery work and how to design, make or use them. From aerospace systems (rockets, jets, drones) to high-performance automobiles (electric vehicles, autonomous driving), smartphones and robotics, mechanical engineering technology have changed society for the better.

RIT's Mechanical Engineering Technology Degree

In our mechanical engineering technology degree, you'll study the foundations of mechanics, materials, and energy. You will learn technical skills such as computer-aided design (CAD), generative design, materials characterization, mechanical system analysis and design, thermal-fluid system design, and product design and development. You also will learn to apply these principles and skills to the various fields of mechanical engineering technology--such as product and machine design, power generation, energy management, and advanced manufacturing--through laboratories and design projects. Full-time students gain valuable industrial experience through the required cooperative education program. Students may select an option in robotics and automation or product design.

The major develops well-rounded engineers as lifelong learners with the ability to adapt, grow, and succeed in a highly competitive workplace. The required cooperative education experience enables students to be well-prepared to step into professional positions after graduation and be immediately productive in jobs that include product development, machine design, and analysis, alternative energy, manufacturing engineering, or systems engineering.

The mechanical engineering technology degree offers select concentrations in one of the following areas: alternative energy, heating/ventilating/air conditioning (HVAC), machine design and analysis, materials engineering, product development, or thermofluids engineering. The curriculum offers some flexibility in enabling you to customize your own concentration based on your career objectives or personal interests.

Options

The mechanical engineering technology major offers two options that enable you to further develop an area of expertise.

- The product design option allows for specialized study in all engineering aspects of product ideation, innovation, design confirmation, and design validation.
- The robotics and automation option allows for specialized study in all engineering aspects of industrial and collaborative (cobots) robotics along with automation/controls.

Jobs in Mechanical Engineering Technology

A mechanical engineering technology degree can lead to a range of exciting jobs in mechanical engineering technology, including positions such as mechanical engineer, digital manufacturing engineer, process engineer, quality engineer, algorithm engineer, sales engineer, and more. Graduates are in demand, and companies such as GE, General Motors, Stanley Black & Decker, Thermo Fisher Scientific, and many others seek out our graduates.

High-Performance Teams and Professional Organizations

Many of mechanical engineering students participate in high-octane performance teams, including the RIT Formula SAE Racing Team, the SAE Aerodesign Club, the RIT Baja SAE Team, RIT SAE Clean Snowmobile Team, and the Human-Powered Vehicle Competition team. They also are encouraged to participate in the student chapters of professional societies such as the American Society of Mechanical Engineers, the Society of Women Engineers, the National Society of Black Engineers, the Society of Hispanic Professional Engineers, the American Institute of Aeronautics and Astronautics, and the Society of Automotive Engineers.

Engineering vs. Engineering Technology

Two dynamic areas of study, both with outstanding outcomes rates. Which do you choose?

What's the difference between engineering and engineering technology? It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering vs. engineering technology is more about identifying what you like to do and how you like to do it.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the mechanical engineering technology degree are required to complete four co-op blocks. This typically includes one spring, one fall, and two summer blocks. You'll alternate periods of full-time

study with full-time paid work experience in your career field. In some circumstances, other forms of experiential education (e.g., study abroad, research, military service) may be used to fulfill part of the co-op requirement. Each student is assigned a co-op advisor to assist in identifying and applying to co-op opportunities.

Curriculum

Mechanical Engineering Technology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Scientific Principles Perspective)	3
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
MCET-101	Fundamentals of Engineering	3
MCET-110	Foundations of Metals	2
MCET-111	Characterization of Metals Lab	1
MCET-150	Engineering Communication and Tolerancing	3
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
	General Education – First Year Writing: FYW (WI)	3
RMET-105	Machine Tools Lab	1
RMET-120	Manufacturing Processes	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
Second Year		
EEET-115	Circuits I	3
EEET-116	Circuits I Lab	1
ENGT-95	Career Seminar	0
MATH-211	Elements of Multivariable Calculus and Differential Equations (General Education)	3
MCET-210	Foundations of Non-Metallic Materials	2
MCET-211	Characterization of Non-Metallic Materials Lab	1
MCET-220	Principles of Statics	3
MCET-221	Strength of Materials	4
PHYS-112	College Physics II (General Education)	4
STAT-145	Introduction to Statistics I (General Education)	3
Choose one of the following:		3
COMM-142	Introduction to Technical Communication (WI)	
COMM-221	Public Relations Writing (WI)	
COMM-253	Communication (WI)	
ENGL-260	Written Argument (WI)	
SOIS-325	Business Communication (WI)	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
MCET-320	Mechanical Dynamics with Applications	3
MCET-430	Thermal Fluid Science I	3
MCET-499	MCET Co-op (spring, summer)	0
STAT-146	Introduction to Statistics II (General Education)	4
	General Education – Elective 1	3
	General Education – Social Perspective	3
Fourth Year		
MCET-450	Mechanical Analysis & Design I (WI-PR)	3
MCET-499	MCET Co-op	0
MCET-520	Measurement Systems & Controls	3
MCET-530	Thermal Fluid Science II	3
MCET-550	Mechanical Analysis & Design II (WI-PR)	3
MCET-565	MCET Engineering Technology Capstone Project (WI-PR)	4
	Open Elective	3
	General Education - Immersion 2	3
	General Education - Elective 2	3
Fifth Year		
MCET-330	Fluid Mechanics & Fluid Power	3
	Technical Elective 1	3
	Open Electives	6
	General Education – Immersion 3	3
MCET-535	Thermal Fluid Systems Project	2
		3
Total Semester Credit Hours		**128**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Options

Students may elect to pursue a Degree Option by using Open Electives to complete one of the options below:

Robotics and Automation

Complete 9 credits from the following courses:	
CPET-133	Introduction to Digital and Microcontroller Systems
RMET-340	Automation Control Systems
RMET-341	Automation Control Systems Lab
RMET-571	Advanced Automation Systems and Control
RMET-585	Robots & Automation
RMET-587	Robotics: Sensors and Vision

Product Design Option

Complete 9 credits from the following courses:	
MCET-582	Robust Design
MCET-583	Plastics Product Design
MCET-585	Product Ideation
MCET-586	Product Innovation
MCET-595	Applied Finite Element Analysis
RMET-460	Integrated Design for Manufacture & Assembly
RMET-650	Manufacturing and Mechanical Systems Fundamentals

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Mechanical Engineering Technology, BS degree/ Manufacturing and Mechanical Systems Integration, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Scientific Principles Perspective)	3
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
MCET-101	Fundamentals of Engineering	3
MCET-110	Foundations of Metals	2
MCET-111	Characterization of Metals Lab	1
MCET-150	Engineering Communication and Tolerancing	3
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
RMET-105	Machine Tools Lab	1
RMET-120	Manufacturing Processes	3
UWRT-150	First Year Writing (WI) General Education	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
Second Year		
EEET-115	Circuits I	3
EEET-116	Circuits I Laboratory	1
ENGT-95	Career Seminar	0
MATH-211	Elements of Multivariable Calculus and Differential Equations (General Education – Elective)	3
MCET-210	Foundations of Non-Metallic Materials	2
MCET-211	Characterization of Non-Metallic Materials Lab	1
MCET-220	Principles of Statics	3
MCET-221	Strength of Materials	3
MCET-499	MCET Co-op (summer)	0
PHYS-112	College Physics II (General Education – Elective)	4
STAT-145	Introduction to Statistics I (General Education – Elective)	3
Choose one of the following:		3
COMM-142	Introduction to Technical Communication (WI) (General Education – Elective)	
COMM-221	Public Relations Writing (WI) (General Education – Elective)	
COMM-253	Communication (WI) (General Education – Elective)	
ENGL-260	Written Argument (WI) (General Education – Elective)	
SOIS-325	Business Communication (WI) (General Education – Elective)	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
MCET-320	Mechanical Dynamics with Applications	3
MCET-430	Thermal Fluid Science I	3
MCET-499	MCET Co-op (summer)	0
MCET-530	Thermal Fluid Science II	3
MFET-600	MMSI Graduate Seminar	0
RMET-650	Manufacturing and Mechanical Systems Fundamentals	3
STAT-146	Introduction to Statistics II (General Education – Elective)	4
Choose one of the following:		3
ISEE-682	Lean Six Sigma	
RMET-730	Six Sigma for Design and Manufacturing	
	General Education – Social Perspective	3
	MMET Concentration Course	3
	Open Elective	3
	General Education – Immersion 1	3
Fourth Year		
MCET-330	Fluid Mechanics & Fluid Power	3
MCET-450	Mechanical Analysis & Design I (WI-PR)	3
MCET-499	MCET Co-op (summer)	0
MCET-520	Measurement Systems & Controls	3
MCET-535	Thermal Fluid Systems Project	2
MCET-550	Mechanical Analysis & Design II (WI)	3
MCET-565	MCET Engineering Technology Capstone Project (WI-PR)	1
STAT-670	Design of Experiments	3
	General Education – Immersion 2	3
	General Education – Electives	3
	MMET Concentration Course	3
Fifth Year		
ACCT-603	Accounting for Decision Makers	3
	MMET Concentration Course	3
	MMET Elective	3
	Open Electives	6
	General Education - Elective	3
	General Education – Immersion 3	3
Choose one of the following:		3
	MMET Elective *	
RMET-788	MMSI Thesis Planning *	
Choose one of the following:		3
DECS-744	Project Management	
PROF-710	Project Management	
Choose one of the following:		3
RMET-790	MMSI Thesis	
RMET-795	MMSI Comprehensive Exam (0 SCH) and MMSI elective (3 SCH)	
RMET-797	MMSI Capstone Project	
Total Semester Credit Hours		**155**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
*RMET-788 option is to be taken by students on the Thesis Track, while a MMET elective is to be taken by students on the Capstone and Comprehensive Exam track.

Options

Robotics and Automation

Complete 9 credits from the following courses:	
CPET-133	Introduction to Digital and Microcontroller Systems
RMET-340	Automation Control Systems (required)
RMET-341	Automation Control Systems Lab (required)
RMET-545	Electronics Manufacturing
RMET-571	Advanced Automation Systems and Control
RMET-585	Robots & Automation (required)
RMET-587	Robotics: Sensors and Vision

Product Design

Complete 9 credits from the following courses:	
MCET-582	Robust Design
MCET-583	Plastics Product Design
MCET-585	Product Ideation
MCET-586	Product Innovation
MCET-595	Applied Finite Element Analysis
RMET-460	Integrated Design for Manufacture and Assembly
RMET-650	Manufacturing and Mechanical Systems Fundamentals

Accreditation

The BS in mechanical engineering technology major is accredited by the Engineering Technology Accreditation Commission of ABET, https://www.abet.org. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in mathematics, science, engineering science, and engineering technology

Appropriate associate degree programs for transfer

Electrical or mechanical technology, electronic technology, engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Mechatronics Engineering Technology, BS

www.rit.edu/study/mechatronics-engineering-technology-bs

Robert Garrick, Professor
585-475-4288, rdgmet@rit.edu

Program overview

- Airplanes are complex mechanical systems with thousands of embedded computers and electrical systems that coordinate and monitor everything from the flight control system, navigational system, and air speeds to interior lights, wing flaps, and communication systems.
- Sorting and packaging systems on production lines combine manufacturing efficiencies with computer systems that can effectively scan, sort, and package products.
- Smart doorbells integrate motion sensing, real-time video capture, facial recognition, and voice control, all controlled by an app on your phone.
- Drones combine electrical, computer, and mechanical engineering with control systems and imaging technologies in order to take off and land, capture photos and videos, gather and communicate data, and accurately aim and launch projectiles.

These are just a sampling of the dynamic capabilities of mechatronic engineering. And students who earn a mechatronics engineering degree are at the forefront of developing and integrating the technologies that influence how we work, play, learn, and live.

What is Mechatronics Engineering?

Mechatronics engineering combines electrical, computer, and mechanical engineering along with systems integration and project management. It focuses on mechanics, electronics, robotics, automation, imaging and sensing technologies, and computing to design and develop smart products and smart manufacturing systems. Mechatronics engineering is the design and development of the entire system in mind, not just one component.

There is a growing need for mechatronic engineers who have a strong foundation in the key areas – electrical engineering, computer engineering, mechanical engineering, programming, systems design, manufacturing processes, robotics, and automation – that influence the design and development of products with the whole system in mind, not just one component.

A degree in mechatronics engineering technology integrates these key areas into one program that prepares students for careers in designing and developing the products of the future. The degree takes a systems approach, analyzing the whole system and breaking it down into subsystems and their individual components to prepare graduates for the innovative design solutions that will be required of them.

RIT's Degree in Mechatronics Engineering Technology

In the BS degree in mechatronics engineering technology, students develop skills in courses that build a foundation of knowledge in electrical, computer, and mechanical engineering. You'll also study circuits and electronics, computing and programming, manufacturing materials, microprocessors and digital systems, automation and robotics, and control systems.

Adding a minor in a complementary area of study deepens your expertise in a core area of mechatronics and broadens your skill set for a career in this dynamic field. These minors support the mechatronics engineering technology program:

- applied statistics
- business administration

- computer science
- computing security
- engineering management
- manufacturing systems
- plastics engineering and technology
- surface mount electronics manufacturing
- sustainable product development

Four blocks, or approximately one year, of cooperative education provides full-time, paid experience in industry. A senior design project in your final year is a team-based experience where you will combine your course work and co-op experiences to work on a design project focused on the development of mechatronic technologies, such as components and systems.

High-Performance Teams and Professional Organizations

Many of mechanical engineering students participate in high-octane performance teams, including the RIT Formula SAE Racing Team, the SAE Aerodesign Club, the RIT Baja SAE Team, RIT SAE Clean Snowmobile Team, and the Human-Powered Vehicle Competition team. They also are encouraged to participate in the student chapters of professional societies such as the American Society of Mechanical Engineers, the Society of Women Engineers, the National Society of Black Engineers, the Society of Hispanic Professional Engineers, the American Institute of Aeronautics and Astronautics, and the Society of Automotive Engineers.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the mechatronics engineering technology degree are required to complete four co-op blocks. You'll alternate periods of full-time study with full-time paid work experience in your career field. In some circumstances, other forms of experiential education (e.g., study abroad, research, military service) may be used to fulfill part of the co-op requirement. Each student is assigned a co-op advisor to assist in identifying and applying to co-op opportunities.

Curriculum

Mechatronics Engineering Technology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CPET-133	Introduction to Digital and Microcontroller Systems	3
EEET-115	Circuits I	3
EEET-116	Circuits I Laboratory	1
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
MCET-101	Fundamentals of Engineering	3
MCET-110	Foundations of Metals	2
MCET-111	Characterization of Metals Lab	1
RMET-105	Machine Tools Lab	1
RMET-120	Manufacturing Processes	3
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
	General Education – First-Year Writing: FYW (WI)	3
YOPS-10	RIT 365: RIT Connections	0
Second Year		
CPET-121	Computational Problem Solving I	
EEET-213	Electronic Devices	3
ENGT-95	Career Seminar	0
MATH-211	General Education – Elective: Elements of Multivariable Calculus and Differential Equations	3
MCET-220	Principles of Statics	3
MECA-290	Mechanics for Mechatronics	3
PHYS-112	College Physics II (General Education)	4
RMET-340	Automation Control Systems	2
RMET-341	Automation Control Systems Lab	
Choose one of the following:		3
COMM-142	Introduction to Technical Communication (WI)	
COMM-221	Public Relations Writing (WI)	
COMM-253	Communication (WI)	
ENGL-260	Written Argument (WI)	
SOIS-325	Business Communication (WI)	
	General Education – Artistic Perspective	3
	General Education - Global Perspective	3
Third Year		
CHMG-131	General Chemistry for Engineers (General Education-Scientific Principles Perspective)	3
MCET-150	Engineering Communication and Tolerancing	3
MECA-499	MECA Co-op	0
RMET-585	Robots & Automation	3
STAT-145	Introduction to Statistics I (General Education – Elective)	3
	General Education – Ethical Perspective	3
	General Education - Social Perspective	3
Fourth Year		
EEET-427	Control Systems	4
MCET-430	Thermal Fluid Science I	3
MECA-499	MECA Co-op	0
STAT-146	Introduction to Statistics II	4
	General Education – Immersion 1	3
	Open Elective	3
Fifth Year		
Choose one of the following:		3
CPET-233	Digital Systems Design	
CPET-253	Microcontroller	
EEET-125	Circuits II	
EEET-125	Circuits II Lab	
EEET-241	Electrical Machines and Transformers	
EEET-242	Electrical Machines and Transformers Lab	
RMET-571	Advanced Automation Systems and Control	
RMET-587	Robotics: Sensors & Vision	
MCET-530	Thermal Fluid Science II	3
MECA-436	Engineering Economics	2
	General Education – Immersion 2, 3	6
	General Education - Elective	3
	Open Electives	9
MECA-565	MECA Engineering Technology Capstone Project (WI-PR)	
Total Semester Credit Hours		**126**

The proposed curriculum outline provides an overview of the course work/topic areas in this new program and is subject to change.
Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Mechatronics Engineering Technology, BS degree/ Manufacturing and Mechanical Systems Integration, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CPET-133	Introduction to Digital and Microcontroller Systems	3
EEET-115	Circuits I	3
EEET-116	Circuits I Lab	1
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
MCET-101	Fundamentals of Engineering	3
MCET-110	Foundations of Metals	2
MCET-111	Characterization of Metals Lab	1
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
RMET-105	Machine Tools	1
RMET-120	Manufacturing Processes	3
UWRT-150	First Year Writing (WI) (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Global Perspective	
Second Year		
CPET-121	Computational Problem Solving I	3
EEET-213	Electronic Devices	3
ENGT-95	Career Seminar	0
MATH-211	Elements of Multivariable Calculus and Differential Equations (General Education – Elective)	3
MCET-220	Principles of Statics	3
MECA-290	Mechanics for Mechatronics	3
MECA-499	MECA Co-op (summer)	0
PHYS-112	College Physics II (General Education – Elective)	4
RMET-340	Automation Control Systems	2
RMET-341	Automation Control Systems Lab	1
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
Choose one of the following:		3
COMM-142	Introduction to Technical Communication (WI-GE)	
COMM-221	Public Relations Writing (WI-GE)	
COMM-253	Communication (WI-GE)	
ENGL-260	Written Argument (WI-GE)	
SOIS-325	Business Communication (WI-GE)	
Third Year		
CHMG-131	General Chemistry for Engineers (General Education – Scientific Principles Perspective)	3
EEET-427	Control Systems	4
MCET-150	Engineering Communication and Tolerancing	3
MECA-499	MECA Co-op (summer)	
RMET-585	Robots & Automation	3
RMET-600	MMSI Graduate Seminar	0
RMET-650	Manufacturing and Mechanical Systems Fundamentals	3
STAT-145	Introduction to Statistics I (General Education – Elective)	3
Choose one of the following:		3
CPET-233	Digital Systems Design	
CPET-253	Microcontroller Systems	
EEET-125	Circuits II and EEET-126 Circuits II Lab	
EEET-241	Electrical Machines and Transformers and EEET-242 Electrical Machines and Transformers Lab	
RMET-571	Advanced Automation Systems and Control	
RMET-587	Robotics: Sensors and Visions	
Choose one of the following:		3
ISEE-682	Lean Six Sigma	
RMET-730	Six Sigma for Design and Manufacturing	
	General Education – Ethical Perspective	3
	MMET Concentration Course	3
Fourth Year		
MECA-565	MECA Engineering Technology Capstone Project (WI)	4
MECA-499	MECA Co-op	0
MCET-430	Thermal Fluid Science I	3
MCET-530	Thermal Fluid Science II	3
STAT-146	Introduction to Statistics II (General Education – Elective)	4
STAT-670	Design of Experiments	3
	MMET Concentration Course	3
	General Education – Elective	3
	Open Elective	3
	General Education – Immersion 1, 2	6

COURSE		SEMESTER CREDIT HOURS
Fifth Year		
ACCT-603	Accounting for Decision Makers	3
MECA-436	Engineering Economics	2
Choose one of following:		3
DECS-744	Project Management	
PROF-710	Project Management	
Choose one of the following:		3
RMET-788	MMSI Thesis Planning *	
	MMET Elective Course *	
Choose one of the following:		3
RMET-790	MMSI Thesis	
RMET-795	MMSI Comprehensive Exam and MMET Elective	
RMET-797	MMSI Capstone Project	
	MMET Elective	3
	MMET Concentration Course	3
	General Education – Immersion 3	3
	Open Elective	3
Total Semester Credit Hours		**153**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
* Students along the Thesis path are to take RMET-788 while Capstone and Comprehensive Exam track students take a MMET Elective course.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in mathematics, science, engineering science, and engineering technology

Appropriate associate degree programs for transfer

Manufacturing, mechanical, drafting and design, robotics, or electromechanical technology; engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Packaging Science, BS

www.rit.edu/study/packaging-science-bs
Erin Aaron,
585-475-2278, eeaast@rit.edu

Program overview

RIT's Packaging Science Degree

RIT's packaging science major is a dynamic major that integrates engineering, creative design, and business to develop and design product packaging for a range of consumer goods. During the conceptualization, design, and development of product packaging, you will learn to weigh factors such as:

- Keeping products safe from damage during transportation, especially in e-commerce.
- Maintaining food freshness and safety.
- Implementing eco-friendly, sustainable practices for post-use recycling and reuse.
- Appealing to consumers at the point of purchase.
- Communicating product information.
- Sustaining transportation efficiency.

Explore Our Packaging Engineering Curriculum

Our bachelor of science in packaging science is one of the most unique and well-respected in the country. You'll study course work that combines technology, art, business, and design in these key areas:

- Design: Size, shape, sustainability, graphics, and color all contribute to creating highly marketable packaging designs that are not only innovative but encourage interactivity and interest for the consumer..
- Sustainability: New developments in materials and processes are a growing way for companies to reduce the environmental impact and the ecological footprint of product packaging. Eco-friendly solutions can protect the environment, encourage biodegradable packaging, and ensure post-use recycling and reuse.
- Engineering: with our packaging engineering curriculum, you'll combine principles of engineering and physics (such as shock, vibration, and compression) with materials science (paper, polymers, glass, metal and other materials) to develop packaging structures and container systems that can protect and sustain products, medical devices, consumer goods and food products during transportation, distribution, display, and purchase.
- Marketing: Engaging consumers, understanding their purchasing behavior, analyzing marketing data and intelligence, and using packaging as a marketing tool can all impact the success of a product. You'll learn the business and marketing side of packaging, through courses in marketing, communication, consumer behavior, and more.

Hands-On Experience to Gain Real-World Skills

The packaging science degree also includes:

- Extensive laboratory work: Explore packaging solutions and tackle real-life problem-solving in hands-on lab assignments that take place in state-of-the-art facilities.
- Two blocks of cooperative education: RIT's packaging science degree is the only program in the country that requires its students to complete cooperative education, allowing them to gain real-world experience and broaden their industry contacts through paid cooperative education and internships.

Packaging Science Industry Advisory Board

The Industry Advisory Board contributes professional and technical expertise to the packaging science degree, which strengthens and develops the curriculum to reflect the dynamics and growth of the industry.

Furthering Your Education in Packaging Science

RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

- Packaging Science BS/ Packaging Science MS: In this combined accelerated dual degree you will develop a solid background in packaging science, and with our packaging science MS you will dig deeper and do research in packaging development, sustainable packaging and advanced packaging design. This is perfect for students who would like to both solve current packaging problems and develop new sustainable solutions for the future.
- Packaging Science BS/Materials Science and Engineering MS: In this combined accelerated dual degree you will develop a solid background in packaging science and pursue your interests in creating and evaluating new sustainable material solutions in our materials science and engineering MS. You will enhance your skills and provide opportunities for research in critical areas such as food and pharmaceutical packaging.
- +1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in packaging science as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.
- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success. Both MBA options are perfect for students with deeper interest in the marketing, supply chain and business management aspects of packaging.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

In the packaging engineering degree, you'll complete two required blocks of co-op. You'll gain extensive career experience through full-time, paid co-op positions in companies that design and develop packaging for cosmetics and health products, pharmaceuticals and medical

products, food and beverages, tools and equipment for manufacturing, toys, and other consumer goods, and more. You'll also develop your professional skills and broaden your industry contacts.

Companies that employ our packaging science students for co-ops include Colgate-Palmolive, CONMED, CooperVision, GlaxoSmithKline, Hammer Packaging, Hasbro, Honda of America Manufacturing, Inc., Johnson & Johnson Family of Companies, Merck & Co., Inc., Milwaukee Tool, PepsiCo, Revlon, and Stanley Black & Decker, to name a few.

Jobs for Packaging Engineers and Packaging Designers

RIT's packaging engineering degree prepares you for employment in areas such as package development, packaging design, sales, purchasing, structural design, production, research, and marketing. The major was developed as a result of a close and long-established relationship between the packaging industry and RIT. This multi-billion-dollar industry is experiencing dynamic growth and packaging engineers and packaging designers with wide-ranging skills and expertise are in demand.

Packaging Science Career Fair

RIT hosts a packaging science-specific career fair that connects packaging science majors with corporations, organizations, design firms, and more, who hire packaging professionals. During this day-long event, you'll be able to network with company representatives and interview directly for open co-op and permanent employment positions.

Curriculum

Packaging Science, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-123	Chemistry of Materials (General Education)	3
CHMG-141	General & Analytical Chemistry I (General Education)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education)	1
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
PACK-101	Introduction to Packaging	1
PACK-151	Packaging Design I	3
PACK-152	Packaging Design II	3
	General Education – First Year Writing: FYW (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
Second Year		
CHMG-201	Introduction to Organic Polymer Technology (General Education)	3
PACK-95	Career Seminar	0
PACK-211	Packaging Metals & Plastics	3
PACK-212	Packaging Paper & Glass	3
PACK-311	Containers I	3
PACK-312	Containers II	3
PACK-499	Co-op Work Experience	0
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
STAT-145	Introduction to Statistics I (General Education – Elective)	3
	General Education – Environmental Elective†	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
MEDG-106	Microbiology of Health And Disease (General Education – Scientific Principles Perspective)	3
MKTG-230	Principles of Marketing	3
PACK-420	Technical Communications (WI-PR)	3
PACK-421	Packaging for Distribution	3
PACK-422	Dynamics and Protective Packaging	3
PACK-430	Packaging Regulations	3
PACK-499	Co-op Work Experience	0
STAT-146	General Education – Elective: Introduction to Statistics II	4
	General Education – Immersion 1	3
	General Education – Elective	3
	Open Elective	3
Fourth Year		
PACK-470	Food Packaging	3
PACK-481	Packaging for Marketing and End Use	3
Choose one of the following:		3
DECS-310	Operations Management	
PACK-471	Packaging Supply Chain	
Choose one of the following:		3
MAAT-368	Gravure and Flexography	
MAAT-541	Digital Print Processes	
MAAT-558	Package Printing	
	Packaging Electives	6
	General Education – Immersion 2, 3	6
	Open Electives	6
Total Semester Credit Hours		**121**

Please see General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
Students must complete two blocks of cooperative education in addition to course work.
† Students may choose one of the following environmental elective courses: Concepts of Environmental Science (ENVS-101), Environment and Society (STSO-220), or Environmental Policy (STSO-421).

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Packaging Science, BS degree, Packaging Science, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-123	Chemistry of Materials (General Education)	3
CHMG-141	General & Analytical Chemistry I (General Education)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education)	1
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
PACK-101	Introduction to Packaging	1
PACK-151	Packaging Design I	3
PACK-152	Packaging Design II	3
	General Education – First Year Writing: FYW (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
Second Year		
CHMG-201	Introduction to Organic Polymer Technology (General Education)	3
PACK-95	Career Seminar	0
PACK-211	Packaging Metals & Plastics	3
PACK-212	Packaging Paper & Glass	3
PACK-311	Containers I	3
PACK-312	Containers II	3
PACK-499	Co-op Work Experience	0
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
STAT-145	Introduction to Statistics I (General Education – Elective)	3
	General Education – Environmental Elective†	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
MEDG-106	Microbiology of Health And Disease (General Education – Scientific Principles Perspective)	3
MKTG-230	Principles of Marketing	3
PACK-420	Technical Communications (WI-PR)	3
PACK-421	Packaging for Distribution	3
PACK-430	Packaging Regulations	3
Choose one of the following:		3
PACK-471	Packaging Supply Chain	
DECS-310	Operations Management	
PACK-499	Co-op Work Experience	0
STAT-146	Introduction to Statistics II (General Education – Elective)	4
	General Education – Immersion 1	3
	General Education – Elective	3
	Open Elective	3
Fourth Year		
PACK-470	Food Packaging	3
PACK-481	Packaging for Marketing and End Use	3
PACK-783	Advanced Packaging Dynamics	3
Choose one of the following:		3
MAAT-368	Gravure and Flexography	
MAAT-541	Digital Print Processes	
MAAT-558	Package Printing	
	Packaging Electives	6
	General Education – Immersion 2, 3	6
	Open Electives	6
Fifth Year		
GRCS-701	Research Methods	3
PACK-730	Packaging and the Environment	3
PACK-742	Distribution Systems	3
PACK-763	Packaging for End Use	3
	Graduate Packaging Electives	12
Choose one of the following:		6
PACK-790	Research Thesis	
PACK-797	Graduate Project and Graduate Packaging Elective	
PACK-795	Comprehensive Exam and Two Graduate Packaging Electives	
Total Semester Credit Hours		**151**

Please see General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
Students must complete two blocks of cooperative education in addition to course work.
† Students may choose one of the following environmental elective courses: Concepts of Environmental Science (ENVS-101), Environment and Society (STSO-220), or Environmental Policy (STSO-421), Sustainable Food Systems (ESHS-370)

Packaging Science, BS degree, Material Science and Engineering, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-123	Chemistry of Materials (General Education)	3
CHMG-141	General & Analytical Chemistry I (General Education)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education)	1
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
PACK-101	Introduction to Packaging	1
PACK-151	Packaging Design I	3
PACK-152	Packaging Design II	3
	General Education – First Year Writing: FYW (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
Second Year		
CHMG-201	Introduction to Organic Polymer Technology (General Education)	3
PACK-95	Career Seminar	0
PACK-211	Packaging Metals & Plastics	3
PACK-212	Packaging Paper & Glass	3
PACK-311	Containers I	3
PACK-312	Containers II	3
PACK-499	Co-op Work Experience	0
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
STAT-145	Introduction to Statistics I (General Education – Elective)	3
	General Education – Environmental Elective†	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
MEDG-106	Microbiology of Health And Disease (General Education – Scientific Principles Perspective)	3
MKTG-230	Principles of Marketing	3
PACK-420	Technical Communications (WI-PR)	3
PACK-421	Packaging for Distribution	3
PACK-422	Dynamics and Protective Packaging	3
PACK-430	Packaging Regulations	3
PACK-499	Co-op Work Experience (Summer)	0
STAT-146	Introduction to Statistics II (General Education – Elective)	4
	General Education – Immersion 1	3
	General Education – Elective	3
	Open Elective	3
Fourth Year		
PACK-470	Food Packaging	3
PACK-481	Packaging for Marketing and End Use	3
Choose one of the following:		3
MAAT-368	Gravure and Flexography	
MAAT-541	Digital Print Processes	
MAAT-558	Package Printing	
Choose one of the following:		3
PACK-471	Packaging Supply Chain	
DECS-310	Operations Management	
	Packaging Electives	6
	General Education – Immersion 2, 3	6
	Open Electives	6
Fifth Year		
MTSE-601	Materials Science	3
MTSE-704	Theoretical Methods in Materials Science and Engineering	3
MTSE-705	Experimental Techniques	3
	Graduate MTSE Electives	6
Choose one of the following:		9
MTSE-790	Research Thesis	
MTSE-777	Project and Two (2) Graduate MTSE Electives	
Total Semester Credit Hours		**145**

Please see General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students may choose one of the following environmental elective courses: Concepts of Environmental Science (ENVS-101), Environment and Society (STSO-220), or Environmental Policy (STSO-421), Sustainable Food Systems (ESHS-370)

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in business, mathematics, science, liberal arts, statistics, or computer science

Appropriate associate degree programs for transfer

Business administration, marketing, management, graphic arts, engineering science, liberal arts with math/science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Print and Graphic Media Technology, BS

www.rit.edu/study/print-and-graphic-media-technology-bs
Bruce Myers, Associate Professor
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Program overview

Print is among the world's largest manufacturing industries and while there's no doubt that the printing industry is evolving, tremendous career opportunities have emerged as part of this transition. While newspapers and magazines have scaled back their print editions, print and digital communications have soared in a range of other applications. Today, the demand for professionals with the unique knowledge of the industry has never been higher. Opportunities for exciting careers abound for individuals with the command of the principles of graphic media processes and applications.

For example, on every store shelf products are displayed in dynamic and innovative packaging. Point of sale displays are designed to engage and entice consumers. Brand owners continually look to print providers to maintain and enhance their brand image through varied media. Marketing materials–from postcards, brochures, and print ads to digital banners, social media, and websites–are all designed to encourage engagement and interaction. And none of these printed and digital collateral materials can be produced without the skills of professionals in the print and graphic media industry.

Today's graphics are custom manufactured by companies who seek the next generation of leaders with the knowledge and unique skillsets required for consistent, high quality printed and collateral materials. What was traditionally viewed as a paper-based enterprise, the print industry has now evolved to include the management, application, and use of dynamic print, graphic media, and digital assets in advertising, public relations, marketing, social media, packaging, printed electronics, and more. It's a vibrant industry that is perfect for those who are interested in a career that combines applied technology with creative flair.

RIT's Print and Graphic Media Technology Undergraduate Degree

RIT's print and graphic media technology undergraduate degree prepares you to become a print and graphic media leader who can bring graphic projects to life.

What's the difference between a graphic designer and a print and graphic media specialist?

A graphic designer is charged with creating visually appealing designs that convey marketing messages or productinformation based on its purpose and audience. A box of granola bars, for example, needs to stand out on a store shelf amid a sea of other products while also communicating the product's health benefits. The graphic designer focuses their efforts on branding, typography, layout, and the overall principles of design to create a visually appealing package for the granola bars. While the design file may capture the intent and message from the brand owner, it is not ready for production and must be prepared for output. This is where the print and graphic media specialist begins their work.

The print and graphic media specialist prepares the design file for output. That output can be a three-dimensional printed piece (product packaging, posters, brochures, direct mail, personalized printed materials), or it can be a digital asset (digital banner ads, websites, social media posts, multimedia projects). For the box of granola bars, print and graphic media specialists prepare the design files for printing and converting, manage the color and printing process(es), make suggestions

for paper selections for printing, coordinate manufacturing logistics, use and manage specialized software and hardware, and more. As graphic media specialists advance into leadership positions, they will oversee all aspects of graphics manufacturing, including management of employees, processes, and projects; inform business and financial performance; and lead the overall organization.

What does a print and graphic media professional do?

- Pre-media Preparation: Pre-media preparation involves optimizing a design file for industrial-scale manufacturing. This includes type and font management, confirming image size and resolution to ensure sharp images, and ensuring accuracy and consistency of color output.
- Production Workflow: Once the graphics are prepared for output, the production processes require oversight and management of each step of the workflow: from pre-media to output and post-press processes such as cutting, bindery, and finishing to on-time, on-budget delivery. Production workflow is the heart of the graphic manufacturing operation.
- Color Management: Engaging projects use color to catch the eye, emphasize messaging, and make a printed piece more interesting. Color management ensures that the colors selected are vibrant, powerful, and meet the brand owner's intention. This is achieved by managing color systems and reproduction technologies.
- Package Printing: Products have a vast array of ways in which they can be packaged. Print and graphic media professionals know how to optimize and execute the reproduction of packaging graphics for products such as boxes, bags, labels, cans, bottles, and other packaging materials. Quality and consistency are foremost concerns for consumer packaging companies in this growth market.
- Managing and Distributing Digital Assets: Digital assets range from photos, videos, animations, text, and more. Print and graphic media professionals use digital asset management systems that organize, manage, store, and distribute these assets.
- Graphic Media Vendors: The industry is supported by a diverse array of vendors, from hardware to software to consumables, career opportunities abound in management, marketing, technical, and sales roles.

RIT's print and graphic media technology degree prepares you to:

- Develop a breadth of cross-channel graphic media production skills.
- Apply expertise in computer graphics, color management, imaging, and business practices that will enable you to manage a range of multimedia projects.
- Build capabilities in publishing, database management, new media production, networking, and mobile communications.
- Produce and manage content across multiple types of traditional and digital media.
- Lead in a range of industries that rely on graphic communications.

Furthering Your Education in Print and Graphic Communication

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

- Print and Media Graphic Technology BS/Packaging Science MS: Packaging is currently the largest growth area in the printing industry. As such, RIT offers this unique accelerated dual-degree to better prepare you for a successful career in the package printing industry. As a growth segment, the packaging industry offers tremendous opportunities for professionals with knowledge of both the graphic reproduction and the physical structures of packaging. Students with a dual degree in graphic media technology and packaging science are uniquely prepared for leadership opportunities and successful career trajectories in this high-demand field.
- +1 MBA: Students who enroll in the print and graphic media technology BS degree also have the opportunity to enroll in the +1 MBA program. In as few as five years, students can earn a BS degree and an MBA, enabling them to apply their knowledge in a range of graphic media business leadership positions.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Hands-On Experience = Real-World Skills

RIT's print and graphic media technology major requires students to complete two co-ops where you will gain hands-on experience in the graphic media, digital media, packaging, and publishing industries. These full-time, paid work experiences prepare you to apply your classroom knowledge and gain practical experience that is highly valued by companies looking to hire the next generation of graphic media professionals.

Curriculum

Print and Graphic Media Technology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MAAT-102	Introduction to Graphic Media	1
MAAT-106	Typography and Page Design	3
MAAT-108	Raster and Vector Imaging	3
MAAT-206	Print Production	3
MAAT-271	Webpage Production I	3
MATH-101	College Algebra (General Education – Mathematical Perspective A)	3
	General Education – First Year Writing: FYW (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education - Social Perspective	3
	General Education – Electives	6
Second Year		
COMM-142	Introduction to Technical Communication (WI)	3
COMM-223	Digital Design in Communication	3
MAAT-10	Co-op Orientation	0
MAAT-267	Paginated Graphic Workflow	3
MAAT-306	Information Architecture Publishing	3
MAAT-368	Gravure and Flexography	3
MATT-499	Media Arts and Technology Co-op (summer)	0
Choose one of the following:		3
MAAT-302	Professional and Technical Writing (WI-PR)	
PACK-420	Technical Communications (WI-PR)	
PACK-101	Introduction to Packaging	1
STAT-146	Introduction to Statistics II (General Education)	4
	General Education – Ethical Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Natural Science Inquiry Perspective	3
	General Education - Elective	3
Third Year		
COMM-342	Communication Law and Ethics	3
MAAT-301	Database Publishing	3
MAAT-365	Automation and Scripting for Graphic Media	3
MAAT-499	Media Arts and Technology Co-op (summer)	0
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Immersion 1	3
MAAT-544	Color Management Systems	3
MAAT-558	Package Printing	3
RMET-420	Quality Engineering Principles	3
RMET-450	Lean Production & Supply Chain Operations	3
Fourth Year		
MAAT-402	Graphic Media Business Practices (WI-PR)	3
MAAT-403	Graphic Media Capstone Project	2
	General Education – Immersion 2,3	6
	General Education – Electives	3
	Open Electives	12
MAAT-541	Digital Print Processes	3
Total Semester Credit Hours		**122**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Print and Graphic Media Technology, BS degree, Packaging Science, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MAAT-102	Introduction to Graphic Media	1
MAAT-106	Typography and Page Design	3
MAAT-108	Raster and Vector Imaging	3
MAAT-206	Print Production	3
MAAT-271	Webpage Production I	3
MATH-101	College Algebra (General Education – Mathematical Perspective A)	3
	General Education – First Year Writing: FYW (WI)	3
STAT-145	Introduction to Statistics (General Education - Mathematical Perspective B)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education - Social Perspective	3
	General Education – Electives	3
Second Year		
COMM-142	Introduction to Technical Communication (WI)	3
COMM-223	Digital Design in Communication	3
MAAT-10	Co-op Orientation	0
MAAT-267	Paginated Graphic Workflow	3
MAAT-306	Information Architecture Publishing	3
MAAT-368	Gravure and Flexography	3
MATT-499	Media Arts and Technology Co-op (summer)	0
PACK-101	Introduction to Packaging	1
STAT-146	Introduction to Statistics II (General Education)	4
	General Education – Scientific Principles Perspective	3
	General Education – Natural Science Inquiry Perspective	3
	General Education - Elective	6
Third Year		
COMM-342	Communication Law and Ethics	3
MAAT-301	Database Publishing	3
MAAT-365	Automation and Scripting for Graphic Media	3
MAAT-499	Media Arts and Technology Co-op (summer)	0
MAAT-544	Color Management Systems	3
RMET-420	Quality Engineering Principles	3
RMET-450	Lean Production & Supply Chain Operations	3
	General Education – Ethical Perspective	3
	General Education - Elective	3
	General Education – Global Perspective	3
	General Education – Immersion 1	3
Fourth Year		
MAAT-402	Graphic Media Business Practices (WI-PR)	3
MAAT-403	Graphic Media Capstone Project	2
PPRT-641	Digital Printing and Publishing	3
PPRT-688	Package Printing	3
	General Education – Immersion 2,3	6
	Open Electives	12
Fifth Year		
GRCS-701	Research Methods	3
PACK-730	Packaging and the Environment	3
PACK-742	Distribution Systems	3
PACK-763	Packaging for End Use	3
PACK-783	Advanced Packaging Dynamics	3
	Graduate Packaging Electives	9
Choose one of the following:		6
PACK-790	Research Thesis	
PACK-797	Graduate Project and Graduate Packaging Elective	
PACK-795	Comprehensive Exam and Two Graduate Packaging Electives	
Total Semester Credit Hours		**152**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, college math, physics and chemistry, business

Appropriate associate degree programs for transfer

Transfer from associate degree programs considered on an individual basis

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Robotics and Manufacturing Engineering Technology, BS

www.rit.edu/study/robotics-and-manufacturing-engineering-technology-bs
Beth Carle, Professor
5854756752, easmet@rit.edu

Program overview

Innovations in industrial automation and manufacturing robotics are creating an increased demand for highly skilled robotics and manufacturing engineers. RIT's robotics and manufacturing engineering technology major prepares you to become an engineer well-versed in advanced manufacturing technologies. Right now, the demand for robotics engineers, manufacturing engineers, and those skilled in designing and integrating automation into manufacturing processes is outweighing the number of students graduating with degrees in robotics engineering, resulting in outstanding employment opportunities for our graduates.

Robotics in the Manufacturing Industry

The future of robotics in manufacturing has arrived. Today's manufacturing industry has evolved and its focus is now on advanced manufacturing, which emphasizes:

- automation and advanced robotics to increase productivity and execute the precise maneuvers required to assemble small electronic parts.
- big data and cloud computing to help manufacturers track and analyze trends and statistics, monitor productivity, and engage in data-supported decision-making.
- 3D printing to decrease waste and improve output, and to reduce time needed for replacement parts.
- artificial intelligence and the Internet of Things, which connects machines and devices and revolutionizes the way machines communicate and function.
- augmented reality to create visual designs and simulations.

To meet the needs of the evolving manufacturing industry, RIT's degree in robotics engineering focuses on preparing you to lead in this dynamic, ever-changing industry.

Robotics Engineering Courses

Students in the robotics and manufacturing engineering technology degree acquire skills in a wide variety of disciplines, including course work in automation and robotics, electronics manufacturing, mechatronics, advanced manufacturing processes, and integrated design. The degree's comprehensive curriculum also includes traditional and non-traditional manufacturing processes, materials technology, computer-aided design, computer-aided manufacturing, controls for manufacturing automation, microprocessors, electrical and electronics principles, surface mount electronics manufacturing, quality control, lean manufacturing, engineering economics, and production and operations management. The uniqueness of this program is its combination of robotics and manufacturing courses and its emphasis on project-based, hands-on education.

Adding a minor in a complementary area of study deepens your expertise in the core areas of robotics manufacturing and broadens your skill set for a career in this dynamic field. These minors enhance the robotics and manufacturing engineering technology program:

- applied statistics
- business analytics
- computer science
- computing security
- engineering management
- manufacturing systems
- plastics engineering and technology
- surface mount electronics manufacturing
- sustainable product development

High-Performance Teams and Professional Organizations

Many of mechanical engineering students participate in high-octane performance teams, including the RIT Formula SAE Racing Team, the SAE Aerodesign Club, the RIT Baja SAE Team, RIT SAE Clean Snowmobile Team, and the Human-Powered Vehicle Competition team. They also are encouraged to participate in the student chapters of professional societies such as the American Society of Mechanical Engineers, the Society of Women Engineers, the National Society of Black Engineers, the Society of Hispanic Professional Engineers, the American Institute of Aeronautics and Astronautics, and the Society of Automotive Engineers.

Engineering vs. Engineering Technology

Two dynamic areas of study, both with outstanding outcomes rates. Which do you choose?

What's the difference between engineering and engineering technology? It's a question we're asked all the time. While there are subtle differences in the course work between the two, choosing a major in engineering vs. engineering technology is more about identifying what you like to do and how you like to do it.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more. Learn more about our accelerated bachelor's/master's degrees and how you can prepare for your future faster.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Your engineering co-ops will provide hands-on experience that enables you to apply your engineering knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the robotics and manufacturing engineering technology program are required to complete four co-op blocks. This typically includes one spring, one fall, and two summer blocks. You'll alternate periods of full-time study with full-time paid work experience in your career field. In some circumstances, other forms of experiential education (e.g., study abroad, research, military service) may be used to fulfill part of the co-op requirement. Each student is assigned a co-op advisor to assist in identifying and applying to co-op opportunities.

Curriculum

Robotics and Manufacturing Engineering Technology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
MCET-101	Fundamentals of Engineering	3
MCET-110	Foundations of Metals	2
MCET-111	Characterization of Metals Lab	1
MCET-150	Engineering Communication and Tolerancing	3
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
	General Education – First Year Writing: FYW (WI)	3
RMET-105	Machine Tools Lab	1
RMET-120	Manufacturing Processes	3
YOPS-10	RIT 365: RIT Connections	0
	General Education - Global Perspective	3
Second Year		
CPET-121	Computational Problem Solving I (General Education)	3
EEET-115	Circuits I	3
EEET-116	Circuits I Laboratory	1
ENGT-95	Career Seminar	0
MATH-211	Elements of Multivariable Calculus and Differential Equations (General Education)	3
MECA-290	Mechanics for Mechatronics	3
MCET-220	Principles of Statics	3
PHYS-112	College Physics II (General Education)	4
RMET-340	Automation Control Systems	2
RMET-341	Automation Control Systems Lab	1
RMET-585	Robots & Automation	
	General Education – Ethical Perspective	3
	General Education - Social Perspective	3
Third Year		
CHMG-131	General Chemistry for Engineers (General Education-Scientific Principles Perspective)	3
CPET-133	Introduction to Digital and Microcontroller Systems	3
RMET-545	Electronics Manufacturing	3
STAT-145	Introduction to Statistics I (General Education)	3
	Choose one of the following:	3
	COMM-142 Introduction to Technical Communication (WI)	
	COMM-221 Public Relations Writing (WI)	
	COMM-253 Communication (WI)	
	ENGL-260 Written Argument (WI)	
	SOIS-325 Business Communication (WI)	
Fourth Year		
CPET-133	Introduction to Digital and Microcontroller Systems	3
MCET-210	Foundations of Non-Metallic Materials	2
MCET-211	Characterization of Non-Metallic Materials Lab	1
MCET-330	Fluid Mechanics & Fluid Power	3
RMET-450	Lean Production & Supply Chain Operations	3
RMET-350	Integrated Design for Manufacture & Assembly	3
RMET-499	RMET Co-op	0
STAT-146	Introduction to Statistics II	4
	General Education – Immersion 1, 2	6
	General Education – Elective	3
	Open Elective	3
Fifth Year		
MFET-499	MFET Co-op (fall)	0
RMET-565	RMET Engineering Technology Capstone Project (WI-PR)	4
	Open Electives	9
	General Education – Immersion 3	3
Total Semester Credit Hours		**124**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Robotics and Manufacturing Engineering Technology, BS degree/Manufacturing and Mechanical Systems Integration, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
MCET-101	Fundamentals of Engineering	3
MCET-110	Foundations of Metals	2
MCET-111	Characterization of Metals Lab	1
MCET-150	Engineering Communication and Tolerancing	3
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
RMET-105	Machine Tools Lab	1
RMET-120	Manufacturing Processes	3
UWRT-150	General Education – First Year Writing: FYW: Writing Seminar (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education - Global Perspective	3
	General Education - Artistic Perspective	3
Second Year		
CPET-121	Computational Problem Solving I (General Education – Elective)	3
EEET-115	Circuits I	3
EEET-116	Circuits I Laboratory	1
ENGT-95	Career Seminar	0
MATH-211	Elements of Multivariable Calculus and Differential Equations (General Education – Elective)	3
MCET-220	Principles of Statics	3
RMET-499	MFET Co-op (summer)	0
MECA-290	Mechanics for Mechatronics	3
RMET-340	Automation Control Systems	2
RMET-341	Automation Control Systems Lab	1
RMET-585	Robots & Automation	3
PHYS-112	General Education – Elective: College Physics II	4
	General Education – Ethical Perspective	3
	General Education – Social Perspective	3
Third Year		
CHMG-131	General Chemistry for Engineers (General Education - Scientific Principles Perspective)	3
CPET-133	Introduction to Digital and Microcontroller Systems	3
RMET-450	Lean Production & Supply Chain Operations	3
RMET-460	Integrated Design for Manufacture & Assembly	3
RMET-499	RMET- Co-op	0
RMET-545	Electronics Manufacturing	3
RMET-600	MMSI Graduate Seminar	0
RMET-650	Manufacturing and Mechanical Systems Fundamentals	3
Choose one of the following:		3
RMET-730	Six Sigma for Design and Manufacturing	
ISEE-682	Lean Six Sigma	
STAT-145	Introduction to Statistics I	3
STAT-146	Introduction to Statistics II	4
Choose one of the following:		3
COMM-142	Introduction to Technical Communication (WI)	
COMM-221	Public Relations Writing (WI)	
COMM-253	Communication (WI)	
ENGL-260	Written Argument (WI)	
SOIS-325	Business Communication (WI)	
Fourth Year		
MCET-210	Foundations of Non-Metallic Materials	2
MCET-211	Characterization of Non-Metallic Materials Lab	1
MCET-330	Fluid Mechanics & Fluid Power	3
RMET-420	Quality Engineering Principles	3
RMET-499	RMET Co-op (summer)	0
RMET-565	RMET Engineering Technology Capstone Project (WI-PR)	4
STAT-670	Design of Experiments	3
	General Education – Immersion 1	3
	MMET Concentration Courses	6
	Open Elective	6

COURSE		SEMESTER CREDIT HOURS
Fifth Year		
Choose one of the following:		3
DECS-744	Project Management	
PROJ-710	Project Management	
ACCT-603	Accounting for Decision Makers	3
Choose one of the following:		3
MFET-788	MMSI Thesis Planning	
	MMET Elective Course	
Choose one of the following:		3
MFET-797	MMSI Capstone Project	
MFET-790	MMSI Thesis	
MFET-795	MMSI Comprehensive Exam and MMET Elective	
	Open Elective	3
	General Education – Immersion 2, 3	6
	General Education – Elective	3
	MMET Concentration Course	3
	MMET Elective Course	3
Total Semester Credit Hours		**154**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The BS in robotics and manufacturing engineering technology major is accredited by the Engineering Technology Accreditation Commission of ABET, https://www.abet.org. Visit the college's accreditation page for information on enrollment and graduation data, program educational objectives, and student outcomes.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Chemistry or physics is required and biology is recommended.
- Technology electives are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in mathematics, science, engineering science, and engineering technology

Appropriate associate degree programs for transfer

Manufacturing, mechanical, drafting and design, robotics, or electromechanical technology; engineering science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Faculty

Dean's Office

S. Manian Ramkumar, BE, PSG, College of Technology-Bharathiar (India); ME, Rochester Institute of Technology; Ph.D., State University of New York at Binghamton—Dean

Linda A. Tolan, BS, State University College at Geneseo; MS, Rochester Institute of Technology; Ph.D., Andrews University; NCC—Senior Associate Dean for Curriculum Innovation, Human Resources and Engagement; Professor Emerita

Michael Eastman, BS, MS, Rochester Institute of Technology, Ph.D., University at Buffalo—Associate Dean for Academic Programs and Continuous Improvement; Professor

Rebecca L. Sumner, AB, Franklin and Marshall College; MA, Ph.D., University of Rochester—Assistant Dean for Research Development

Melissa Aponte, BA, Ithaca College; MA, Teachers College, Columbia University; Ed.D., St. John Fisher College—Assistant Dean for Students

Rachel Mathews, BS, Siena College, MS, Plattsburg State University—Assistant Dean of Academic Operations

School of Engineering Technology

Civil Engineering Technology

Lu Sun, BS, Ph.D., Southeast University (China); Ph.D., University of Texas at Austin—Department Chair, Civil Engineering Technology, Environmental Management and Safety

Yewande Abraham, BS, MS, Cardiff University (United Kingdom); Ph.D., Pennsylvania State University—Assistant Professor

Amanda Bao, BS, MS, Tianjin University (China); Ph.D., University of Colorado at Boulder, PE—Undergraduate Program Coordinator; Associate Professor

Harry G. Cooke, BS, Northwestern University; MSCE, University of Texas; Ph.D., Virginia Polytechnic Institute and State University; PE—Associate Professor

Lucio Salles de Salles, BS, Federal University of Santa Maria (Brazil); MS, Doctor of Science, University of São Paulo (Brazil)—Assistant Professor

G. Todd Dunn, BS, Dartmouth College; MSCE, University of California; PE—Associate Professor Emeritus

Abdullah Faruque, B.Sc., Bangladesh University of Engineering and Technology (India); M.A.Sc., Ph.D., University of Windsor (Canada); P.Eng.—Associate Professor

Robert E. McGrath Jr., BCE, Rensselaer Polytechnic Institute; MSCE, Syracuse University; PE—Professor Emeritus

Mark Pitterman, MCE, Odessa Marine Engineers Institute (Ukraine)—Professor Emeritus

Rizk Sinada, BS, MS, Rochester Institute of Technology—Senior Lecturer

Yi Su, Bachelor of Management, East China University of Science and Technology (China); ME, Chongqing Jiaotong University (China); Ph.D., The Catholic University of America—Visiting Lecturer

Maureen S. Valentine, BSCE, Tufts University; MECE, Virginia Polytechnic Institute and State University; PE—Professor Emerita

Scott B. Wolcott, BS, MS, State University of New York at Buffalo; Ph.D., State University of New York College of Environmental Science and Forestry; PE—College of Engineering Technology Faculty Associate for Study Abroad Initiatives; Associate Department Chair; Professor

Teresa Wolcott, BS, State University of New York at Buffalo; MS, Rochester Institute of Technology—Principle Lecturer

Gretchen L. Wainwright, BS, MS, Rensselaer Polytechnic Institute; PE—Principle Lecturer

Environmental Sustainability, Health and Safety

Grant J. Esler, BS, Boston University; MPH, University of Michigan; CIH, CPE, CSP—Professor of Practice

Josh Goldowitz, BS, State University of New York at Binghamton; MS, University of Arizona—Undergraduate Program Coordinator; Professor

Lisa Greenwood, BS, Rochester Institute of Technology; MS, University of New Haven; Ph.D., State University of New York College of Environmental Science and Forestry—Assistant Professor

John Morelli, BS, Syracuse University; MS, Ph.D., State University of New York College of Environmental Science and Forestry; PE—Professor Emeritus

Joseph M. Rosenbeck, BS, MS, Central Missouri State University; CSP—Graduate Program Director; Professor

Jennifer L. Schneider, BA, Roberts Wesleyan College; MS, University of Rochester; Ph.D., University of Massachusetts; CIH—Eugene H. Fram Chair in Applied Critical Thinking; Professor

Lu Sun, BS, Ph.D., Southeast University (China), Ph.D., University of Texas at Austin—Professor, Department Chair

Electrical and Computer Engineering Technology

Ashish Agrawal—Assistant Professor

Miguel Bazdresch, BE, Western Institute of Technology and Higher Studies (Mexico); ME, National Polytechnic Institute (Mexico); Ph.D., National Higher School of Telecommunications (France)—Associate Professor

Christopher Brown, BS, MS, Rochester Institute of Technology—Visiting Lecturer

Steven A. Ciccarelli, BS, MS, Rochester Institute of Technology—Associate Professor

Jeanne Christman, BS, Clarkson University; MS, University of Texas at Dallas; Ph.D., University at Buffalo—Associate Department Chair; Associate Professor

Richard C. Cliver, BS, Rochester Institute of Technology; MSEE, University of Rochester—Associate Professor

Holly Dickens, BS, MS, Rochester Institute of Technology—Senior Lecturer

Thomas Dingman, BS, MS, Rochester Institute of Technology—Professor Emeritus

Clark Hochgraf, BS, State University of New York at Buffalo; Ph.D., University of Wisconsin at Madison—Associate Professor

Mark J. Indelicato, BEEE, Manhattan College; MS, Polytechnic University—Associate Professor

William P. Johnson, BA, Kings College; BSEE, MSEE, Syracuse University; JD, University at Buffalo Law School—Professor Emeritus

Daniel S. Kaputa, BS, MS, Ph.D., University at Buffalo—Associate Professor

Sungyoung Kim, BE, Sogang University (Korea); MM, Ph.D., McGill University (Canada)—Associate Professor

Warren L. G. Koontz, BSEE, University of Maryland; MSEE, Massachusetts Institute of Technology; Ph.D., Purdue University—Professor Emeritus

James H. Lee, BS, California Polytechnic State University; MS, Ph.D., Texas A&M University; PE—Acting Department Chair; Associate Professor

Yangming Li, BS, MS, Hefei University of Technology (China); Ph.D., University of Science and Technology of China (China)—Assistant Professor

Drew Maywar, BS, MS, Ph.D., University of Rochester—Professor

Jorge Carlos Mex-Perera, BS Technological Institute of Merida (Mexico); M.Sc. National Polytechnic Institute (Mexico); Ph.D, University of Bradford (United Kingdom)—Assistant Professor

Carol Richardson, BSEE, University of Wyoming; MSEE, Union College—Professor Emerita

John T. Schueckler, AAS, State University College at Canton; BS, Rochester Institute of Technology; MS, Rensselaer Polytechnic Institute—Senior Lecturer

Hwan Shim, BS, Ph.D., Seoul National University—Assistant Professor

George H. Zion, BS, MS, Rochester Institute of Technology; Ph.D., University at Buffalo—Professor

Manufacturing and Mechanical Engineering Technology

Ronald F. Amberger, BME, Rensselaer Polytechnic Institute; ME, Pennsylvania State University; PE—Professor Emeritus

Martin Anselm, BS, State University College at Geneseo; MS, Clarkson University; Ph.D., Binghamton University—Graduate Program Director; Associate Professor

Jun Han Bae, BS, Yonsei University (South Korea); MS, Ph.D., Purdue University—Assistant Professor

Duane Beck, AS, Monroe Community College; BS, Empire State College; MS, Rochester Institute of Technology; Ph.D., LaSalle University—Professor of Practice

Michael R. Caldwell, BS, MS, Rochester Institute of Technology —Lecturer

Beth A. Carle, BSE, University of Pittsburgh; MS, Ph .D ., University of Illinois; EIT Professional Certification—Program Director for Undergraduate Studies; Professor

Gary DeAngelis, BS, MS, University of Lowell—Senior Lecturer

Elizabeth M. Dell, BSME, General Motors Institute; MS, University of Michigan—Director, AdvanceRIT; Professor

Robert D. Garrick, BSEE, GMI Engineering and Management Institute; MBA, Rochester Institute of Technology; MS, University of Rochester; Ph.D., University of South Carolina—Department Chair; Professor

Martin Gordon, BSME, MSME, MBA, State University of New York at Buffalo; PE—Professor

MD Ahasan Habib, BSc, MSc, Bangladesh University of Engineering and Technology (India); Ph.D., North Dakota State University—Assistant Professor

Spencer H. Kim, BS, Hanyang University (South Korea); MS, Ph.D., University of Illinois—Associate Professor

Christopher Lewis, BS, Pennsylvania College of Technology; MS, University of Texas; Ph.D., University of Rochester—Associate Professor

Carl A. Lundgren, BS, Rensselaer Polytechnic Institute; MBA, University of Rochester—Professor Emeritus

Michael P. Medlar, BS, MS, Rochester Institute of Technology—Assistant Professor

Robert A. Merrill, BS, Clarkson College; MS, Northeastern University; PE—Professor Emeritus

Jennifer Mallory O'Neil, BS, University of Rochester; Ph.D., Purdue University—Assistant Professor

Michael J. Parthum Sr., BS, MS, Rochester Institute of Technology—Associate Professor

Brian Rice, BS, University of Buffalo; MS, Ph.D., University of Rochester—Associate Professor

Richard Roe, BS, Iowa State University—Professor of Practice

Michael J. Slifka, AAS, Niagara County Community College; BS, MS, Rochester Institute of Technology—Senior Lecturer

John A. Stratton, BS, Rochester Institute of Technology; MS, Rensselaer Polytechnic Institute; PE—Professor Emeritus

Cynthia Tawaf, BS, Case Western Reserve University; MS, Rochester Institute of Technology—Lecturer

Renae Veneziano, MS, Rochester Institute of Technology—Lecturer

Larry A. Villasmil, BSME, Universidad del Tachira (Venezuela); MSME, Ph.D., Texas A&M University—Associate Professor

Packaging and Graphic Media Science

Bilge N. Altay, BS, MS, Marmara University (Turkey); MS, Ph.D., Western Michigan University—Assistant Professor

Carlos A. Diaz-Acosta, BS, MS, Universidad de los Andes (Colombia); Ph.D., Michigan State University—Associate Professor

Kyle Dunno, BS, MS, Ph.D., Clemson University—Assistant Professor

Robert J. Eller, AB, MA, University of Missouri—Professor Emeritus

Changfeng Ge, BSME, MSME, Tongji University (China); Ph.D., University of Dortmund (Germany)—Graduate Program Director; Professor

Daniel L. Goodwin, BS, MS, Ph.D., Michigan State University—Professor Emeritus

Deanna M. Jacob, BS, State University College at Plattsburgh; MA, State University College at Geneseo; MS, Rochester Institute of Technology—Professor Emeritus

Daniel P. Johnson, BS, MS, Rochester Institute of Technology; M.Ed., University of Buffalo—Interim Department Chair; Professor

Irma Abu-Jumah, BS, Dr. Jose Matias Delgado University (El Salvador); MS, Rochester Institute of Technology—Lecturer

Malcolm Keif, BS, California Polytechnic State

University; MA, California State University; Ph.D., University of Missouri—Professor of Practice

Bruce Myers, BFA, Montclair State University; MS, Ph.D., New York University—Associate Professor

Karen L. Proctor, BS, Michigan State University; MBA, Rochester Institute of Technology—Professor

Alexis Rich, BS, ME, Rochester Institute of Technology—Enterprise Lab Manager; Senior Lecturer

Distinguished Professorships

Russell C. McCarthy Professorship in Engineering Technology

Established: 1979

Donor: The Russell C. McCarthy endowed chair was created in 1980 by a group of six donors to augment the creation of the RIT School of Applied Industrial Studies. The endowed chair now resides in the College of Applied Science and Technology and reports to the college dean.

Purpose: To build relationships between the college and industrial and professional communities worldwide that share the college's interests, goals, and values.

Held by: open

College of Health Sciences and Technology

Yong Tai Wang, Dean
rit.edu/healthsciences

Programs of Study

Combined Accelerated Bachelor's/Master's Degree available.
» Combined Accelerated Bachelor's/Master's Degree required.
Online study option available

Online study option available

Accreditation

The college offers several professional programs, which are all fully accredited through national accrediting organizations.

The diagnostic medical sonography program (ultrasound) is accredited by the Commission on Accreditation of Allied Health Education Programs (caahep.org) upon the recommendation of the Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS), 25400 U.S. Hwy 19N, Suite 158, Clearwater, FL 33763, (727) 210-2350, www.caahep.org.

The physician assistant program is accredited through the Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA).

The nutrition management program is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics.

Programs of Study

Online study option available

RIT's College of Health Sciences and Technology responds to the growing need for well-educated professionals in the health care field. The United States faces a looming shortage of many types of health care professionals, including nurses, physicians, dentists, pharmacists, and allied health workers. The college, housed in the Institute of Health Sciences and Technology, serves as an independent academic and research entity designed to provide a focused, interdisciplinary, and systems approach to innovative health care education, applied/translational research, and community outreach. The institute incorporates three major thrusts: the College of Health Sciences and Technology, the Health Science Research Center, and the Health Science Community Collaboration and Outreach Center.

Please visit the college's website–**www.rit.edu/healthsciences**–for in depth information on academics, admission requirement, faculty, facilities, financial aid and scholarships, research initiatives, and more.

Biomedical Sciences, BS

www.rit.edu/study/biomedical-sciences-bs
Robert Osgood, Associate Professor
585-475-7902, rcoscl@rit.edu

Program overview

The biomedical sciences degree prepares students for advanced study in various areas of health care (e.g. medicine, dentistry, nursing, public health) or research. The diverse curriculum includes a broad array of elective courses and offers students career-relevant experiential learning opportunities where they can apply the knowledge they gain in the classroom to real-world experiences. Comprehensive academic and faculty advising is complemented by a pre-medical/pre-health professions advising system that provides guidance to students in their selection of course work and in completing the requirements necessary for admission to advanced degree programs.

What is Biomedical Science?

The field of biomedical science combines biology and medicine to maintain and promote the health of both humans and animals. It is also an investigative field in which you will conduct hands-on research in order to solve pressing health problems. The biomedical sciences will provide you with a solid foundation to pursue medicine, health care professions, and research in areas such as anatomy, biology, chemistry, biochemistry, nutrition, physiology and kinesiology, epidemiology, diseases, immunology, epidemiology, pharmacology, and more.

RIT's Bachelor's in Biomedical Sciences

The bachelor's in biomedical sciences is a comprehensive program of study that consists of a life sciences core combined with a broad range of flexible elective options that enable you to customize your education to pursue your professional areas of interest. The life sciences core provides students with a strong grounding in mathematics and science with a complement of liberal arts in preparation for entry into medical and dental schools, graduate studies in the health professions, or direct entry into a research position in an applied area of biomedical science. In consultation with an academic adviser, and using a basic course schedule as a guideline, you will select from elective courses relevant to one of these career paths or design your own set of science track electives.

Biomedical sciences majors may also choose elective courses to engage in undergraduate research or independent study with a faculty mentor. These opportunities are not limited to the biomedical sciences faculty or their laboratories. Many of our students participate in highly interdisciplinary research with faculty from the College of Science, the Kate Gleason College of Engineering, the Golisano College of Computing and Information Sciences, and other centers and colleges at RIT. We strongly encourage you to explore the world beyond RIT–through study abroad, community service, experiential learning, and summer research internships. In addition, a minor in one of more than 100 areas of study allow you to pursue a secondary field of interest. The goal of the bachelor's in biomedical sciences is for you to develop the multidisciplinary skills, self-confidence, and cross-disciplinary literacy that allows you to thrive in the dynamic, rapidly changing world of biomedicine and biomedical sciences.

Learn more about program goals and learning outcomes for RIT's bachelor's in biomedical sciences.

Careers in Biomedical Sciences

Dynamic career opportunities in the biomedical sciences continue to grow. This increase in demand is due, in part, to advances in biotechnology, the need for more researchers studying health care problems, medical procedures, and diseases, better treatments for current and emerging health issues, and public policy challenges.

With its grounding in the sciences and mathematics, along with a complement of liberal arts courses, the bachelor's in biomedical sciences is the perfect preparation for a range of career preparation.

Medical School and Graduate Programs in the Health Sciences: The bachelor's in biomedical sciences offers excellent undergraduate preparation for careers in medicine (allopathic and osteopathic), biomedical research, exercise science, pathology, pharmacy, pharmacology and drug development, toxicology, neuroscience, and genetic counseling.

Direct Entry Into Research Positions: Along with course work related to your curriculum, you will also have vast opportunities for hands-on research experiences in a range of areas. These opportunities will prepare you well for direct entry into research positions where you will investigate and explore solutions to a range of medical and health care problems.

Premedical and Health Professions Advisory Program

Medical schools and graduate programs in the health professions (e.g., physician assistant, physical therapy, occupational therapy, etc.) welcome applications from students majoring in a wide range of academic programs. Acceptance into these programs requires the completion of pre-med requirements such as course work in biological and physical sciences, a strong academic record, pertinent experiences in the field, and key intrapersonal and interpersonal capabilities. RIT's Premedical and Health Professions Advisory Program can help you become a competitive candidate for admission to graduate programs in the medical and health professions.

Pre-Vet Advising Program

Being accepted into veterinary school requires a strong academic record, GRE preparation, and accruing hours of direct animal care under the supervision of a veterinarian (DVM), researcher (Ph.D.), or other animal health professional. RIT's Pre-Vet Advising Program provides you with individual, personalized support to helps you fulfill the veterinary school requirements needed for you to become a competitive candidate for admission to veterinary school. The program also helps you acquire the research and real-world experiences required for careers in veterinary medicine.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

A broad and demanding curriculum is the foundation for the career areas supported by the biomedical sciences degree. Yet, all of these areas also require some element of learning that occurs outside of the classroom. Hands-on, experiential learning allows students to explore new areas of study, solidify career goals, and acquire critical extracurricular credentials that increase the competitiveness of graduate and medical school applications and significantly enhance employment opportunities after graduation.

The program strongly encourages students to actively seek out new experiences and to expand their expertise to areas outside of the traditional classroom. These opportunities may include paid employment on campus, study abroad, volunteer work and community service, K-12 outreach and enrichment, professional career shadowing and career-relevant employment, on-campus undergraduate research, Research Experiences for Undergraduates (REUs), summer research internships, and other paid cooperative education. Students receive collaborative advising from faculty and staff in order to systematically build towards their own career goals. In addition, the RIT/Rochester Regional Health Alliance is dedicated to innovation in medical care, education, and research for the betterment of individuals in both respective institutions and the greater Rochester community. RIT is Rochester Regional Health's official academic affiliate and Rochester Regional Health is the university's official affiliated clinical partner.

Curriculum

Biomedical Sciences, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems (General Education)	3
BIOL-124	Introduction to Biology: Molecules and Cells (General Education)	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems (General Education)	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells (General Education)	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-146	General & Analytical Chemistry II Lab (General Education)	1
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
MEDS-242	Cell Structure & Function	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-206	Molecular Biology	3
BIOL-216	Molecular Biology Laboratory	1
MEDS-250	Human Anatomy and Physiology I (General Education)	4
MEDS-251	Human Anatomy and Physiology II (General Education)	4
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	Chemistry Sequence Course 1* (General Education)	4
	Chemistry Sequence Course 2*	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
	Program Elective Requirements	12
	Professional Electives	9
	Professional Elective (WI-PR)	3
	General Education – Immersion	3
	General Education – Social Perspective	3
Fourth Year		
	Program Elective Requirements	6
	Professional Electives	6
	Open Electives	12
	General Education – Immersion 2, 3	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
* Students must choose one of the chemistry sequences below depending on their anticipated career path. For those interested in the pursuit of most allied health career paths: (CHMO-231 Organic Chemistry I, CHMO-235 Organic Chemistry Lab I and CHMB-240 Biochemistry for Health Sciences) or (CHMO-231 Organic Chemistry I, CHMO-235 Organic Chemistry Lab I and CHMB-402 Biochemistry I). For those applying to medical/dental, DPT, PharmD, graduate (research-focused MS/PhD): CHMO-231 Organic Chemistry I, CHMO-235 Organic Chemistry Lab I, CHMO-232 Organic Chemistry II and CHMO-236 Organic Chemistry Lab II.

Electives

Biomedical sciences program electives

Each student must choose a minimum of two courses from each category (for a minimum total of 18 SCH) of Program Electives below. One course cannot be used more than once to this requirement. Additional courses from the list below of from the list of professional electives may be used to meet professional elective requirements.

Medical foundations

COURSE	
MEDS-417	Clinical Microbiology
MEDS-418	Clinical Microbiology Lab
MEDS-422	Endocrinology
MEDS-425	Introduction to Neuroscience
MEDS-520	Histology & Histopathology
MEDS-530	Human Immunology

Medicine and disease

COURSE	
MEDS-245	Medical Genetics
MEDS-313	Introduction to Infectious Diseases
MEDS-421	Parasitology
MEDS-430	Epidemiology
MEDS-515	Medical Pathophysiology

Medicine and health

COURSE	
EXSC-320	Coaching Healthy Behavior
MEDS-402	Biomedical Ethics
Choose one of the following:	
MEDS-360	Placebo, Suggestion, Research and Health
MEDS-361	Applied Psychophysiology and Self-Regulation
Choose one of the following:	
BHNS-311	Diagnosing the Criminal Mind
BHNS-426	Addiction Pharmacology
Choose one of the following:	
NUTR-215	Foundations of Nutrition Sciences
NUTR-300	Sports Nutrition

Biomedical sciences professional electives

COURSE	
BHNS-311	Diagnosing the Criminal Mind
BIOL-265	Evolutionary Biology
BIOL-302	Cell Biology
BIOL-303	Cell Physiology
BIOL-306	Food Microbiology
BIOL-314	Tissue Culture
BIOL-321	Genetics
BIOL-322	Developmental Biology
BIOL-340	Genomics
BIOL-365	Introduction to Population Genetics
BIOL-375	Advanced Immunology
BIOL-408	Biology of Cancer
BIOL-412	Human Genetics
BIOL-415	Virology
BIOL-420	Bacterial-Host Interactions: Microbiomes of the World
BIOL-427	Microbial and Viral Genetics
BIOL-428	Eukaryotic Gene Regulation and Disease
BIOL-450	Genetic Engineering
BIOL-601	Genetic Diseases and Disorders
CHMA-261	Instrumental Analysis
CHMB-240	Biochemistry for Health Sciences
CHMB-402	Biochemistry I
CHMB-405	Biochemistry Lab
CHMO-231	Organic Chemistry I
CHMO-232	Organic Chemistry II
CHMO-235	Organic Chemistry Lab I
CHMO-236	Organic Chemistry Lab II
DCHP-333	Patient Care
DCHP-411	Researching the Criminal Mind
DCHP-415	Pathophysiology of Organ Systems I
DCHP-416	Pathophysiology of Organ Systems II
DCHP-426	Addiction Pharmacology
EXSC-205	Sports Physiology & Life Fitness
EXSC-206	Fitness Prescription
EXSC-207	Exercise for Special Populations
EXSC-280	Strength Training for Performance
EXSC-320	Coaching Healthy Behavior
EXSC-410	Kinesiology
EXSC-430	Theory of Athletic Injury
EXSC-480	Training High Performance Athletes
EXSC-550	Exercise Physiology
MEDS-201	Language of Medicine
MEDS-240	History of Medicine
MEDS-245	Medical Genetics
MEDS-290	Biomedical Research
MEDS-310	Introduction to Pharmacology
MEDS-313	Introduction to Infectious Diseases
MEDS-345	Care-Based Genetic Counseling
MEDS-355	Introduction to Global Health
MEDS-356	Field Studies in Molecular Epidemiology
MEDS-360	Placebo, Suggestion, Research and Health
MEDS-361	Applied Psychophysiology and Self-Regulation
MEDS-370	Community Healthcare
MEDS-402	Biomedical Ethics
MEDS-403	US Healthcare
MEDS-417	Clinical Microbiology
MEDS-418	Clinical Microbiology Lab
MEDS-421	Parasitology
MEDS-422	Endocrinology
MEDS-425	Introduction to Neuroscience
MEDS-430	Epidemiology
MEDS-440H	Cardiac Imaging
MEDS-470	Examining the Clinical Experience
MEDS-475	Health Coach Practicum
MEDS-490	Human Gross Anatomy
MEDS-499	Biomedical Sciences Co-op
MEDS-501	Human Development
MEDS-510	Biomedical Research
MEDS-511	Interdisciplinary Research
MEDS-515	Medical Pathophysiology
MEDS-518	Oral Microbiology
MEDS-520	Histology & Histopathology
MEDS-525	Advanced Clinical Neuroanatomy
MEDS-530	Human Immunology
MEDS-599	Independent Study
NUTR-215	Foundations of Nutrition Sciences
NUTR-300	Sports Nutrition
PMED-300	Premedical Studies Seminar
PHYS-111	College Physics I
PHYS 112	College Physics II

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Biomedical Sciences, BS degree, Health and Well-Being Management, MS degree typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems (General Education)	3
BIOL-124	Introduction to Biology: Molecules and Cells (General Education)	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems (General Education)	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells (General Education)	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-146	General & Analytical Chemistry II Lab (General Education)	1
MATH-161	Applied Calculus	4
MEDS-242	Cell Structure & Function	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-206	Molecular Biology	3
BIOL-216	Molecular Biology Laboratory	1
MEDS-250	Human Anatomy and Physiology I (General Education)	4
MEDS-251	Human Anatomy and Physiology II (General Education)	4
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	General Education – Elective: Chemistry Sequence Course 1*	4
	Chemistry Sequence Course 2*	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
Third Year		
	Program Elective Requirements	12
	Professional Electives	9
	Professional Elective (WI-PR)	3
	General Education – Social Perspective	3
	General Education – Immersion 1	3
Fourth Year		
WSHN-700	Research Methods in Health and Well-being	3
	Program Elective Requirements	6
	Professional Electives	6
	Open Electives	6
	General Education – Immersion 2, 3	6
Choose one of the following:		3
WSHN-710	Population Health, Risk Identification & Management (Emphasis Plan 1)	
HLTH-710	Health Care Economics and Policy (Emphasis Plan 2)	
Fifth Year		
WSHN-701	Health and Nutrition Education and Evaluation	3
WSHN-702	Dissemination and Implementation Science for Health and Well-being	3
	Graduate Electives	12
	Statistics Elective†	3
Choose one of the following Culminating Experiences:		6
WSHN-790	Health & Well-being Management Thesis	
WSHN-797	Health & Well-being Management Project, plus an additional Graduate Elective	
Total Semester Credit Hours		**147**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

* Students must choose one of the chemistry sequences below depending on their anticipated career path. For those interested in the pursuit of most allied health career paths: (CHMO-231 Organic Chemistry I, CHMO-235 Organic Chemistry Lab I and CHMB-240 Biochemistry for Health Sciences) or (CHMO-231 Organic Chemistry I, CHMO-235 Organic Chemistry Lab I and CHMB-402 Biochemistry I). For those applying to medical/dental, DPT, PharmD, graduate (research-focused MS/PhD): CHMO-231 Organic Chemistry I, CHMO-235 Organic Chemistry Lab I, CHMO-232 Organic Chemistry II and CHMO-236 Organic Chemistry Lab II.

† Statistics Elective options include PSYC-640 Graduate Statistics, MATH-655 Biostatistics or STAT-614 Applied Statistics.

Emphasis Plan 1- Content Development, Implementation & Evaluation Recommended Electives

COURSE	
EXSC-650	Exercise Physiology
EXSC-690	Exercise Science Research
HRDE-726	Technology and the Future of Work
NUTR-610	Integrative Approaches to Health
NUTR-650	Community Nutrition
NUTR-655	Nutrition Throughout the Lifecycle
NUTR-680	Global Food and Nutrition Perspectives
PSYC-713	Graduate Developmental Psychology
PSYC-716	Graduate Social Psychology
SERQ-723	Service Analytics
SERQ-747	Design Thinking and Creativity
STAT-672	Survey Design and Analysis
WSHN-600	Principles and Practices of Health Education
WSHN-720	Topics in Health and Nutrition
WSHN-799	Independent Study

Emphasis Plan 2- Health & Well-being Program Management Recommended Electives

COURSE	
EDLI-733	Instructional Design
HLTH-706	Leading Health Systems I
HLTH-718	Evidence-Based Management in Health Care
HLTH-725	Healthcare Strategic Marketing & Communications
HLTH-730	Health Care Financial Management I: Principles & Practice
HLTH-733	Health Systems Quality & Organizational Learning
HLTH-746	Leading Health Systems II
HRDE-726	Technology and the Future of Work
HRDE-735	Leading Human Resources
HRDE-742	Leading Change
HRDE-765	Diversity in Global Workplace
MKTG-761	Marketing Concepts and Commercialization
MKTG-772	Internet Marketing: Strategy & Tactics
PROF-710	Project Management
SERQ-720	Service Scenario and Strategy Development
SERQ-722	Customer Centricity
SERQ-723	Service Analytics
SERQ-740	Leading Innovation
SERQ-747	Design Thinking and Creativity
STAT-672	Survey Design and Analysis
WSHN-720	Topics in Health and Nutrition
WSHN-799	Independent Study

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Biology and chemistry are required.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, and math

Appropriate associate degree programs for transfer

AS degree in biology or liberal arts with biology option

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Diagnostic Medical Sonography (Ultrasound), BS

www.rit.edu/study/diagnostic-medical-sonography-ultrasound-bs

Hamad Ghazle, Professor
585-475-2241, hhgscl@rit.edu

Program overview

Imagine the possibilities that can result from attending a nationally-ranked ultrasound program that houses a modern, state-of-the-art scanning suite where classes are taught by outstanding faculty who are leaders in their field. The outcome is a first-rate educational experience, complete with one year of on-site clinical training, that sets you a path for success in a dynamic health care field.

What is Diagnostic Medical Sonography?

Diagnostic medical sonography, also referred to as ultrasound, has revolutionized the field of medicine. It offers a unique opportunity in the diagnosis, evaluation, and treatment of medical diseases and conditions without the use of surgery, injection of dyes, or radiation. Diagnostic medical sonography is a noninvasive, nontoxic diagnostic medical imaging tool in which high-frequency sound waves are used to produce images of the human body. Ultrasound is readily used to image the heart, blood flow, and abdominal organs as well as the developing fetus and male/female reproductive organs. But ultrasound has found itself to be a critical health care tool beyond radiology, OB/GYN, vascular, and cardiology. It is now used in areas such as emergency medicine, orthopedics, sports medicine, ophthalmology, rheumatology, pain medicine, intensive care, and more. The profession has grown rapidly in the last 20 years and careers in diagnostic medical sonography are expected to continue to grow over the next several decades. Evaluation of the job market, advancements in medical technology, and a survey of current employers all indicate a strong demand for well-trained sonographers.

How to Become a Diagnostic Medical Sonographer

Our diagnostic medical sonography degree is a four-year program that includes a one year clinical internship. RIT is one of very few colleges with ultrasound programs in the U.S. that lead to a bachelor of science in diagnostic medical sonography.

RIT's ultrasound program provides comprehensive sonography education. The program begins with a solid foundation in biology, human anatomy and physiology, and human cross-sectional anatomy. Sonography courses include extensive didactic lectures with full immersion ultrasound scanning in our state-of-the-art Ultrasound Scanning Suite, where students have hands-on instruction in sonography instrumentation and sonographic scanning skills and techniques for vascular evaluation, obstetrics, gynecology, and abdominal and small parts sonography. These courses occur before a one-year clinical internship, where students work in a range of health care settings (hospitals, outpatient centers, physician offices, etc.) where they complete their sonography education with mentors, physicians, and other medical professionals. Courses in patient care and the liberal arts round out your studies. In addition to the development of scanning and diagnostic abilities that focus on relevancy to clinical practice, the program also emphasizes skills in administration, leadership, and research. You will be prepared for careers in diagnostic medical sonography and related medical fields, as well as for medical school and graduate programs in the health sciences. This is a program that provides a high-quality, comprehensive diagnostic medical sonog-

raphy education. You will graduate well-prepared, well-trained, and sought-after in the workplace.

Apply Your Knowledge

With a rigorous hands-on approach, coupled with an emphasis placed on experiential learning, you will gain a wealth of experience applying what you've learned in classroom lectures and lab experiences to a variety of real-life situations. A dedicated faculty is both engaged and passionate about your education and is fully committed to the development of exceptional sonographers and leaders.

Graduates are prepared to pursue a variety of careers in diagnostic medical sonography, nationally and internationally, in medical, industrial, and educational settings. Graduates can be found in a wide range of supervisory and administrative positions in hospitals, clinics, private physicians' offices, teaching, research, sales, and industry. Graduates also can work as freelance sonographers or for mobile services.

Medical Community Support

Our diagnostic medical sonography degree benefits from a comprehensive, supportive medical community comprised of highly-trained radiologists, physicians, sonologists, sonographers, and echocardiographers that guide, educate, and train our students. Many of these professionals are involved in teaching our students both on-campus and at off-campus clinical sites. Our partner clinical sites also employ many of our graduates. Through these interactions, you are exposed to generous and dedicated health care professionals who will enhance your education through professional development, increase your awareness of community needs, and share a sense of cooperative spirit in which medicine is practiced. In addition, many of our clinical instructors, echocardiographers, and sonographers are alumni of our program and are familiar with the standards, expectations, and rigor of the ultrasound program. Learn more about the program's affiliated faculty.

Ultrasound Program Outcomes and Attrition Rate

RIT's diagnostic medical sonography degree has exceptional passing rates on the national examinations:

- OB/GYN: 100%
- Abdomen: 89%
- Cardiac: 100%

The program has a very low attrition rate (0%) and a retention rate of 100%. Job placement is also 100%.

Additional Sonography Education Opportunities

In addition to the bachelor of science in diagnostic medical sonography, RIT also offers two diagnostic medical sonography certificate programs: a certificate in diagnostic medical sonography and a certificate in echocardiography (cardiac ultrasound). Both of these options are not only designed to meet the growing needs of the national and international medical communities but also the needs of individuals who:

- Hold a degree in the life sciences and other closely related degrees who are interested in that may be approved by the program director. Additional pre-requisite course work may be required for any type and level of degree.
- Have a current, active license or registry in an area of medical or allied health sciences, some examples of medical or allied health sciences areas include respiratory therapy, nuclear medicine, physical therapy, radiography (x-rays), nursing, and more. Any of the more than 200 medical or allied health sciences fields also will be considered.

Sonography as a Pre-Med Option

Being accepted into a medical graduate program requires certain qualifications, including completing prerequisite courses, a strong academic record, acquiring pertinent experiences in the field, and developing key intrapersonal and interpersonal qualities. The Premedical and Health Professions Advisory Program works with all students on an individual basis to help them become competitive candidates for admission to graduate programs in the medical and health professions.

The diagnostic medical sonography degree has assisted students in entering the worlds of medicine and dentistry. With the addition of a few courses, and without extending your time at RIT, the ultrasound program can prepare you for medical, dental, or other graduate school programs in the medical or health sciences. Graduates of the ultrasound program have gone on to become physicians, dentists, chiropractors, and more. Learn more about how a diagnostic medical sonography degree can be used as a pre-med option.

Sonography Education Resources

Program Policy and Procedures Handbook/Technical Standards
Please refer to these two documents for more information:

- Program Policy and Procedures Handbook
- Technical Standards
- Program Goals, Objectives, and Outcomes

Prospective students are invited to view the diagnostic medical sonography program brochure.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Clinical Internships

The one-year clinical internship provides hands-on experience at two or more approved medical facilities. After completing the pre-internship course work, all students begin the internship by attending an intensive two-week experience on campus. During this time they enhance and polish the skills they previously learned, prepare to perform complete sonographic examinations as performed in real clinical settings, and advance their knowledge in recognizing anatomy and disease states using a variety of equipment in the Ultrasound Scanning Suite. Students also learn about hospital, departmental, and administrative operations. After completing these requirements, candidates are assigned to a medical training site for their clinical experience. At these facilities, students work side-by-side with sonographers, physicians, and other health care professionals to learn, develop, apply, and sharpen the necessary skills to perform general ultrasound examinations. Students' clinical progress and performance are closely monitored by the program's clinical coordinator and program director, who have regular communication and make periodic visits to the clinical internship sites. Additionally, students return to campus each month for three days of lectures, presentations, projects,

and testing. Students may complete their clinical internships at any approved regional or national medical ultrasound facility, with approval of the program director.

Curriculum

Diagnostic Medical Sonography, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-101	General Biology I (General Education)	3
BIOL-102	General Biology II (General Education)	3
BIOL-103	General Biology I Lab (General Education)	1
BIOL-104	General Biology II Lab (General Education)	1
MATH-111	Precalculus (General Education – Mathematical Perspective A)	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	General Education – Global Perspective	3
	General Education – First Year Writing (WI)	3
Second Year		
MEDS-201	Language of Medicine (General Education)	3
MEDS-250	Human Anatomy and Physiology I (General Education)	4
MEDS-251	Human Anatomy and Physiology II (General Education)	4
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
PHYS-112	College Physics II (General Education – Scientific Principles Perspective:	4
	General Education – Immersion 1, 2	6
	Open Electives	6
Third Year		
DCHP-333	Patient Care	2
DCHP-415	Pathophysiology of Organ Systems I	3
DMSO-301	Sonographic Scanning Skills and Techniques I	3
DMSO-302	Sonographic Scanning Skills and Techniques II	3
DMSO-309	Sonography Physics and Instrumentation I	3
DMSO-310	Sonography Physics and Instrumentation II	3
DMSO-312	Human Cross-Sectional Anatomy	3
	General Education – Immersion 3	3
	Open Electives	6
Fourth Year		
DMSO-414	Sonographic Vascular Evaluation	3
DMSO-452	Obstetrical Sonography I	3
DMSO-453	Gynecological Sonography	3
DMSO-454	Obstetrical Sonography II	3
DMSO-456	Abdominal and Small Parts Sonography I	3
DMSO-457	Abdominal and Small Parts Sonography II	3
DMSO-460	Administration and Research in Sonography (WI-PR)	3
DMSO-570	Clinical Sonography I	7
DMSO-571	Clinical Sonography II	5
Total Semester Credit Hours		**125**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

The Abdomen-Extended, Obstetrics and Gynecology, and Adult Cardiac DMS Program at Rochester Institute of Technology is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Joint Review on Education in Diagnostic Medical Sonography (JRC-DMS).

CAAHEP
9355 - 113th St. N, #7709
Seminole, FL 33775
727-210-2350
www.caahep.org
JRC-DMS
6021 University Blvd., Suite 500
Ellicott City, MD 21043
443-973-3251
www.jrcdms.org

It is noteworthy to mention that the diagnostic medical sonography degree is institutionally accredited and programmatically accredited. This type of dual accreditation meets both professional and employer requirements and also allows our graduates to immediately sit for the national board examinations administered by the American Registry of Diagnostic Medical Sonography (ARDMS).

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Biology is required. Chemistry and physics are preferred.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, and math

Appropriate associate degree programs for transfer

AS degree in liberal arts with science option; allied health; radiologic technology

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Diagnostic Medical Sonography (Ultrasound), Certificate

www.rit.edu/study/diagnostic-medical-sonography-ultrasound-certificate

Hamad Ghazle, Professor
585-475-2241, hhgscl@rit.edu

Program overview

The diagnostic medical sonography certificate is an 18-month program that includes a clinical internship. The program–which focuses on various abdominal, gynecological, obstetrical, and small parts examinations including certain vascular studies–has been designed to meet and exceed the objectives of the Joint Review Committee on Education in Diagnostic Medical Sonography of the Commission on Accreditation of Allied Health Education Programs (CAAHEP). It was created to produce competent, compassionate, and responsible ultrasound professionals and leaders. The certificate is available to all registered allied health practitioners as well as to those holding an associate or bachelor's degree in a relevant discipline. The program includes lectures and course work integrated with a clinical internship. Dependent on a student's previous degree, certain prerequisite courses may be required prior to enrollment. Required prerequisite courses include one year of anatomy and physiology with laboratories and one year of college or general physics with laboratories.

Graduates earning the certificate will:

- be prepared as competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains;
- gain a thorough working knowledge of ultrasound scanning techniques;
- be skilled in the operation of ultrasound instrumentation and laboratory equipment;
- acquire the proper manner in working with patients; and
- under the guidance of faculty and professional staff, be capable of scheduling and performing the daily workload of ultrasound procedures, evaluating new procedures where necessary, and supervising other technical personnel.

Plan of Study

During the first academic year, students complete all the prerequisite courses required to enter the clinical internship phase of the program. Students also apply, polish, and test their clinical skills and techniques in the on-campus ultrasound scanning suite, which is equipped with a variety of ultrasound equipment. Following a required two-week pre-clinical internship orientation session, students begin their training at the first of two assigned clinical training sites.

Experiential Learning

Clinical Internships

The one-year clinical internship provides hands-on experience at two or more approved medical facilities. After completing the pre-internship course work, all students begin the internship by attending an intensive two-week experience on campus. During this time they enhance and polish the skills they previously learned, prepare to perform complete sonographic examinations as performed in real clinical settings, and advance their knowledge in recognizing anatomy and disease states using a variety of equipment in the Ultrasound Scanning Suite. Students also learn about hospital, departmental, and administrative operations. After completing these requirements, candidates are assigned to a medical training site for their clinical experience. At these facilities, students work side-by-side with sonographers, physicians, and other health care professionals to learn, develop, apply, and sharpen the necessary skills to perform general ultrasound examinations. Students' clinical progress and performance are closely monitored by the program's clinical coordinator and program director, who have regular communication and make periodic visits to the clinical internship sites. Additionally, students return to campus each month for three days of lectures, presentations, projects, and testing. Students may complete their clinical internships at any approved regional or national medical ultrasound facility, with approval of the program director.

Curriculum

Diagnostic Medical Sonography, certificate, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
DCHP-333	Patient Care	2
DCHP-415	Pathophysiology of Organ Systems I	3
DMSO-301	Sonographic Scanning Skills and Techniques I	3
DMSO-302	Sonographic Scanning Skills and Techniques II	3
DMSO-309	Sonography Physics and Instrumentation I	3
DMSO-310	Sonography Physics and Instrumentation II	3
DMSO-312	Human Cross-Sectional Anatomy	3
Second Year		
DMSO-414	Sonographic Vascular Evaluation	3
DMSO-452	Obstetrical Sonography I	3
DMSO-453	Gynecological Sonography	3
DMSO-454	Obstetrical Sonography II	3
DMSO-456	Abdominal and Small Parts Sonography I	3
DMSO-457	Abdominal and Small Parts Sonography II	3
DMSO-460	Administration and Research in Sonography (WI-PR)	3
DMSO-570	Clinical Sonography I	7
DMSO-571	Clinical Sonography II	5
Total Semester Credit Hours		**53**

Accreditation

The Abdomen-Extended, Obstetrics and Gynecology, and Adult Cardiac DMS Program at Rochester Institute of Technology is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Joint Review on Education in Diagnostic Medical Sonography (JRC-DMS).

CAAHEP
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443-973-3251
www.jrcdms.org

It is noteworthy to mention that the diagnostic medical sonography degree is institutionally accredited and programmatically accredited. This type of dual accreditation meets both professional and employer requirements and also allows our graduates to immediately sit for the national board examinations administered by the American Registry of Diagnostic Medical Sonography (ARDMS).

Echocardiography (Cardiac Ultrasound), Certificate

www.rit.edu/study/echocardiography-cardiac-ultrasound-certificate

Hamad Ghazle, Professor
585-475-2241, hhgscl@rit.edu

Program overview

Echocardiography focuses on the evaluation of the heart, its valves and chambers, and associated vessels. The echocardiography certificate produces competent, compassionate, and responsible professionals and leaders who are skilled in ultrasound scanning techniques and the operation of ultrasound instrumentation.

The certificate in echocardiography is an 18-month program that includes a clinical internship. The program, which focuses on the evaluation of the heart, its valves and chambers, and associated vessels, has been designed to exceed the objectives of the Joint Review Committee on Education in Diagnostic Medical Sonography. The program produces competent, compassionate, and responsible echocardiography professionals and leaders. This certificate is available to all registered allied health practitioners as well as those holding an associate or bachelor's degree in a relevant discipline. The certificate includes lectures and course work integrated with a clinical internship. Dependent on the previous degree, certain prerequisite courses may be required prior to enrollment. Required prerequisite courses include one year of anatomy and physiology with laboratories, one year of college or general physics with laboratories. A patient care course/experience may be required prior to or during enrollment. For more information on the prerequisite courses and completion time, please contact the program director. We will be glad to assist you and provide you with detailed information dependent on your situation.

Graduates earning the certificate will:

- be prepared as competent entry-level adult cardiac sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.
- gain a thorough working knowledge of ultrasound scanning techniques;
- be skilled in the operation of ultrasound instrumentation and laboratory equipment;
- acquire the proper manner in working with patients; and
- under the guidance of faculty and professional staff, be capable of scheduling and performing the daily workload of ultrasound procedures, evaluating new procedures where necessary, and supervising other technical personnel.

Plan of Study

During the first academic year, students complete all the prerequisite courses required to enter the clinical internship phase of the program. Students also apply, polish, and test their clinical skills and techniques in the on-campus Ultrasound Scanning Suite, which is equipped with a variety of ultrasound equipment. Following a required two-week preclinical internship orientation session, students begin their training at the first of two assigned clinical training sites.

In addition to the echocardiography certificate, RIT also offers a bachelor of science degree and a certificate in diagnostic medical sonography. Both of these options are designed to meet the growing needs of the national and international medical communities.

Experiential Learning

Clinical Internships

The one-year clinical internship provides hands-on experience at two or more approved medical facilities. After completing the pre-internship course work, all students begin the internship by attending an intensive two-week experience on campus. During this time they enhance and polish the skills they previously learned, prepare to perform complete sonographic examinations as performed in real clinical settings, and advance their knowledge in recognizing anatomy and disease states using a variety of equipment in the Ultrasound Scanning Suite. Students also learn about hospital, departmental, and administrative operations. After completing these requirements, candidates are assigned to a medical training site for their clinical experience. At these facilities, students work side-by-side with sonographers, physicians, and other health care professionals to learn, develop, apply, and sharpen the necessary skills to perform general ultrasound examinations. Students' clinical progress and performance are closely monitored by the program's clinical coordinator and program director, who have regular communication and make periodic visits to the clinical internship sites. Additionally, students return to campus each month for three days of lectures, presentations, projects, and testing. Students may complete their clinical internships at any approved regional or national medical ultrasound facility, with approval of the program director.

Curriculum

Echocardiography, certificate, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ECHO-305	Cardiac Sectional Anatomy and Physiology	3
ECHO-307	Echocardiographic Scanning Skills and Techniques I	1
ECHO-308	Echocardiographic Scanning Skills and Techniques II	1
ECHO-320	Electrophysiology and Cardiac Pharmacology	2
DCHP-415	Pathophysiology of Organ Systems I	3
DMSO-309	Sonography Physics and Instrumentation I	3
DMSO-310	Sonography Physics and Instrumentation II	3
Second Year		
ECHO-401	Echocardiography I	3
ECHO-402	Echocardiography II	3
ECHO-410	Ischemic Heart Disease: Stress Echocardiography	2
ECHO-415	Cardiac M-Mode	2
ECHO-420	Clinical Echocardiography I	4
ECHO-421	Clinical Echocardiography II	4
ECHO-425	Seminar in Echocardiography	2
ECHO-430	Congenital Heart Disease I	2
ECHO-431	Congenital Heart Disease II	2
ECHO-465	Echocardiography Special Procedures	2
Total Semester Credit Hours		**42**

Accreditation

The Abdomen-Extended, Obstetrics and Gynecology, and Adult Cardiac DMS Program at Rochester Institute of Technology is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Joint Review on Education in Diagnostic Medical Sonography (JRC-DMS).

CAAHEP
9355 - 113th St. N, #7709
Seminole, FL 33775
727-210-2350
www.caahep.org
JRC-DMS
6021 University Blvd., Suite 500
Ellicott City, MD 21043
443-973-3251
www.jrcdms.org

It is noteworthy to mention that the diagnostic medical sonography degree is institutionally accredited and programmatically accredited. This type of dual accreditation meets both professional and employer requirements and also allows our graduates to immediately sit for the national board examinations administered by the American Registry of Diagnostic Medical Sonography (ARDMS).

Exercise Science, BS

www.rit.edu/study/exercise-science-bs
William Brewer, Senior Lecturer
585-475-2476, wsbscl@rit.edu

Program overview

As an exercise science major you will learn to scientifically address issues of health and fitness as well as human performance as part of a rapidly growing field. A clinical track focuses on helping people recover from the unhealthy effects of a sedentary lifestyle and an athletic track focuses on training athletes to extend and expand their capacity for exceptional human performance.

RIT's exercise science degree is designed to be completed in four years and is offered at RIT as an on-campus learning experience. The program also offers clinical and athletic tracks.

The clinical track is designed for students interested in using exercise as therapy. Clinical exercise medicine is an emerging field that is poised to grow as the population ages. This field is for students who see the opportunity to provide exercise/fitness services as an integrated medical service. With an entrepreneurial spirit, students prepare themselves to become the newest practitioners in the health care field. Clinical exercise physiologists perform fitness assessments, design exercise prescriptions, and implement therapeutic exercise programs for health promotion.

The athletic track is for students who want to raise the bar of performance for athletes at all levels. A scientific approach to athletic conditioning improves performance while maintaining the health of athletes. Athletic track courses allow students to learn how to better train and maintain athletes, especially those performing at intense levels of competition. Skilled strength and conditioning specialists are in demand at all levels of sports and the prevalence of private-sector sports-specific training facilities has never been higher. Students interested in a career to train athletes and enhance the capabilities of those who play sports will be well prepared to advise and guide the next generation of athletic performers.

Program Goals and Student Learning Outcomes

The exercise science program has set the following student goals and learning outcomes:

Integrate scientific information and research into practice

- Demonstrate how to locate, interpret, evaluate, and use professional literature to make ethical practice decisions.
- Use current information technologies to locate and apply evidence-based guidelines and protocols.

Develop communication skills and professional behaviors for entry into pre-professional practice

- Demonstrate effective and professional oral and written communication
- Demonstrate assertiveness, advocacy, and negotiation skills appropriate to the situation
- Demonstrate counseling techniques to facilitate behavior change
- Apply established guidelines to professional practice
- Describe the professional roles that collaborate with an exercise physiologist in the delivery of fitness services

Develop and deliver information and clinical customer services

- Use the fitness assessment process to make decisions, identify problems and evaluate fitness interventions

- Apply knowledge of the role of the environment, exercise, and lifestyle choices to develop interventions to affect change and enhance wellness in diverse individuals and groups
- Utilize knowledge of education and behavior change theories to develop an educational session or program for a target population

Demonstrate foundational knowledge of core sciences

- Demonstrate knowledge of physical, chemical, and biological sciences

Prepare students for successful completion of National Fitness Certification Exams

- Acquire the knowledge, skills, and abilities required for successful completion of an advanced certification with an organization accredited by the National Commission for Certifying Agencies (NCCA). Examples include the American College of Sports Medicine (ACSM), Certified Exercise Physiologist, and the National Strength and Conditioning Association (NSCA), Certified Strength and Conditioning Specialist.

Minor in Exercise Science

The exercise science minor is designed to prepare students to take an accredited certification exam and to become a professionally credentialed personal trainer. The minor is open to all RIT students, except those majoring in exercise science.

Certificate in Exercise Science

Completion of the certificate in exercise science prepares you for employment as an entry-level service provider in a fitness facility. To enroll in the certificate program, you do not need to be a matriculated student at RIT. The certificate requires the completion of three courses. For additional information, including curriculum and admissions information, please visit the exercise science certificate program page.

Certification

Students who complete the athletic track are prepared to achieve professional certification through the National Strength and Conditioning Association (NSCA) as a Certified Strength and Conditioning Specialist (CSCS). The CSCS is a highly respected and sought-after credential in the field of strength conditioning. Students completing the clinical track are well prepared to take the American College of Sports Medicine (ACSM) Certified Exercise Physiologist exam. This certification validates the knowledge, skills, and abilities of fitness and exercise practitioners who are prepared to work with people diagnosed with chronic diseases.

Exercise Science as a Pathway to Medical School

An exercise science degree can allow to pursue your passion for human performance and prepare you to apply to medical school.

Physicians who understand the value of regular exercise in the management of chronic disease conditions such as coronary artery disease and diabetes are often successful providers in future models of health care. An undergraduate education in exercise science is an ideal way to develop this knowledge while preparing for entrance to medical school. RIT's exercise science major also prepares you for certification as an ACSM Exercise Physiologist, a credential that verifies your knowledge, skills, and abilities in exercise prescription and qualifies you for employment in a number of growing areas of fitness provision.

The exercise science major also provides you with an excellent education that serves as a strong foundation for a medical career that follows the principles of Exercise is Medicine, a global health initiative managed by the American College of Sports Medicine (ACSM), which seeks to increase the use of exercise as a primacy therapeutic modality for the management of chronic disease.

Premedical and Health Professions Advisory Program

Medical schools and graduate programs in the health professions (such as physician assistant, physical therapy, and occupational therapy) welcome applications from students majoring in a wide range of academic programs. Acceptance into these programs requires the completion of pre-med requirements such as course work in biological and physical sciences, a strong academic record, pertinent experiences in the field, and key intrapersonal and interpersonal capabilities. Learn more about how RIT's Premedical and Health Professions Advisory Program can help you become a competitive candidate for admission to graduate programs in the medical and health professions.

2+2 Transfer Options

The exercise science program has articulation agreements with a number of colleges that enable you to seamlessly transfer into the exercise science program upon the successful completion of your associate degree at one of the following schools. For more information regarding these 2+2 transfer options, please contact Undergraduate Admissions or the program director.

- Finger Lakes Community College
- Genesee Community College
- Hudson Valley Community College
- Morrisville State College
- SUNY Erie
- Monroe Community College

Learn more about transferring credits and additional information about transferring to RIT by visiting the Transfer Admissions website.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

Cooperative education and internships are work experience in your field of study. And they set RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. Cooperative education and internships are designed for your success.

Cooperative education and internships are optional but strongly encouraged for students in the exercise science major.

Curriculum

Exercise Science, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-101	General Biology I (General Education)	3
BIOL-102	General Biology II (General Education)	3
BIOL-103	General Biology I Lab (General Education)	1
BIOL-104	General Biology II Lab (General Education)	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective:)	1
EXSC-101	Seminar in Exercise Science	1
EXSC-150	Introduction to Exercise Science	3
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
MEDS-242	Cell Structure & Function	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
Second Year		
EXSC-206	Fitness Prescription	3
EXSC-210	Human Motor Behavior	3
MEDS-250	Human Anatomy and Physiology I (General Education)	4
MEDS-251	Human Anatomy and Physiology II (General Education)	4
PHYS-111	College Physics I (General Education)	4
PHYS-112	College Physics II (General Education)	4
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
EXSC-410	Kinesiology	4
EXSC-420	Biomechanics	4
EXSC-550	Exercise Physiology	4
	Professional Electives	9
	General Education – Social Perspective	3
	General Education – Immersion 1	3
Fourth Year		
EXSC-270	Group Exercise	3
EXSC-320	Coaching Healthy Behavior	3
NUTR-560	Health and Nutrition Research Foundations (WI-PR)	3
	Open Electives	12
	General Education – Immersion 2, 3	6
Total Semester Credit Hours		**121**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing-intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Electives

COURSE	
EXSC-207	Exercise for Special Populations
EXSC-280	Strength Training for Performance
EXSC-360	Worksite Health Promotion
EXSC-370	Senior Adult Fitness
EXSC-380	Sports Psychology
EXSC-430	Theory of Athletic Injuries
EXSC-440	Cardiac Rehabilitation
EXSC-480	Training High Performance Athletes
EXSC-587	Experiential Topics in Exercise Science
EXSC-589	Topics in Exercise Science
EXSC-590	Exercise Science Research (WI-PR)

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Biology and chemistry are required.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, and math

Appropriate associate degree programs for transfer

AS degree in liberal arts with science option

Please note: The exercise science program has articulation agreements with the following institutions:

- Finger Lakes Community College
- Genesee Community College
- Hudson Valley Community College
- Monroe Community College
- Morrisville State College
- SUNY Erie

Learn more about transferring credits and additional information about transferring to RIT by visiting the Transfer Admissions website.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Exercise Science, Certificate

www.rit.edu/study/exercise-science-certificate
William Brewer, Senior Lecturer
585-475-2476, wsbscl@rit.edu

Program overview

A certificate in exercise science prepares you to sit for a range of fitness and training exams, including the exams to become a personal trainer, group exercise instructor, health coach, and more. It can also complement other programs such as the biomedical sciences, nutritional sciences, or dietetics and nutrition, as it bolsters your knowledge of exercise, in particular, strength and conditioning.

RIT's Certificate in Exercise Science

College-level knowledge and professional certification are increasingly required for those who wish to work in the fitness industry, whether full- or part-time, in an athletic club, wellness center, or sports medicine facility. Knowledge of, and professional certification in, personal training, fitness instruction, and related programming also are of increasing value to allied health professionals who wish to augment their level of care with the ability to prescribe exercise and wellness programs that address special medical needs.

Exercise Science Courses

In just three classes, RIT's exercise science certificate can open the door to a range of exciting opportunities. The exercise science certificate enables you to:

- Bolster your knowledge of exercise, in particular, strength and conditioning.
- Qualify you to sit for a range of fitness and training exams, including the exams to become a personal trainer, group exercise instructor, health coach, and more.
- Boost your professional options. For students majoring in biomedical sciences or nutritional sciences the certificate can enhance your professional opportunities.For students in other majors the certificate is a way to continue your involvement in fitness, wellness, and health regardless of your career path.

Exercise Science Certification

The certificate in exercise science covers the basic principles of exercise physiology, fitness assessment, the preparation of fitness programs and prescriptions, and the development of exercise prescriptions for individuals with medical or other significant limitations. Students who successfully complete all three courses are prepared to sit for professional certification examinations from the American College of Sports Medicine, American Council on Exercise, and the American Academy of Health and Fitness Professionals, as well as for certifications from the Cooper Institute for Aerobic Research, the National Academy of Sports Medicine, and a number of other recognized organizations.

Curriculum

Exercise Science, certificate, typical course sequence

COURSE		SEMESTER CREDIT HOURS
EXSC-205	Sports Physiology & Life Fitness	3
EXSC-206	Fitness Prescription	3
EXSC-207	Exercise for Special Populations	3
Total Semester Credit Hours		**9**

Health Systems Administration, Certificate

www.rit.edu/study/health-systems-administration-certificate
Carla Stebbins, Senior Lecturer
585-475-4761, casihst@rit.edu

Program overview

There will be four million new jobs in the health care industry by 2026. Gain the skills you need to advance in the ever-growing health care field.

Health Systems Administration: A Critical, In-Demand Role in the Health Care Industry

The health systems administration certificate introduces you to the complexity of the U.S. health care system. You will learn how health care organizations plan for and deliver effective health care services, how various services are financed as well as other financial management strategies, and how to effectively lead these highly complex, mission-driven organizations that serve people throughout their lives.

Students working on undergraduate degrees in the health sciences or those considering a career within the health care industry, would benefit from this certificate program, as it provides an excellent orientation to the health care industry as a whole.

An Online Health Care Administration Certificate

Each of the certificate's four courses are delivered online during the 14-week, fall and spring semesters. Most courses are taught by faculty who also teach in RIT's master of science degree in health systems management.

The health systems administration certificate is designed for three types individuals:

- Students who have completed their associate degree or are in the process of completing a bachelor's degree who are considering careers in health care but desire an orientation to the U.S. health system;
- Working professionals, without a bachelor's degree, who are interested in exploring the health care delivery system; and
- Professionals that have invested in clinical degrees, but their primary programs fell short of a completed bachelor's degree who desire to understand the business side of health care.

There are three primary goals for the health systems administration certificate program:

1. Understand the role of the U.S. health care system, how it compares to other countries systems, in achieving health and wellness;
2. Appreciate the complexity of the system and the related organizations that respond to the needs of their communities and the populations within them; and
3. Assess the leadership potential of those interested in careers within the design and delivery of high-quality health service systems.

Curriculum

Health Systems Administration, certificate, typical course sequence

COURSE		SEMESTER CREDIT HOURS
HLTH-325	Health Care Leadership	3
HLTH-328	Finance for Health Care Professionals	3
HLTH-330	Health Care Planning And Program Development	3
HLTH-508	Integrated Health Systems and Population Health	3
Total Semester Credit Hours		**12**

Admission requirements

Certain countries are subject to comprehensive embargoes under US Export Controls, which prohibit virtually ALL exports, imports, and other transactions without a license or other US Government authorization. Learners from Syria, Sudan, North Korea, the Crimea region of the Ukraine, Iran, and Cuba may not register for RIT online courses. Nor may individuals on the United States Treasury Department's list of Specially Designated Nationals or the United States Commerce Department's table of Deny Orders. By registering for RIT online courses, you represent and warrant that you are not located in, under the control of, or a national or resident of any such country or on any such list.

Nutritional Sciences, BS

www.rit.edu/study/nutritional-sciences-bs
Elizabeth Ruder, Associate Professor
585-475-2402, ehrihst@rit.edu

Program overview

Understanding nutrition, especially nutritional content, can have a remarkable impact on our health. Educating the public about the benefits of nutrition, and the various ways healthy living can improve our well-being, is the focus of the BS degree in nutritional sciences.

The nutritional sciences degree blends biological, chemical, and behavioral sciences to help health professionals, administrators of nutrition and health promotion programs, and the general public better understand and translate the science of food into policy and practice. Nutritionists and nutrition scientists apply their knowledge to help businesses offer employee wellness programs; assist food systems administrators and engineers involved in food innovation and technology; and oversee government programs addressing food insecurity and population health issues.

Part of the Wegmans School of Health and Nutrition, the major offers a challenging curriculum that prepares students with an in-depth understanding of nutrition as an important moderator of health. Students are well prepared to apply to professional programs, such as medical school, enter graduate school for further biomedical studies, or provide expertise in nutrition to the general public in a range of diverse settings (e.g., sports fitness programs, hospitality industry, nutrition writing, and federal nutrition programs).

An effective nutritional scientist is skilled in working with people to address behavioral issues, teach clients about nutrition and health properties in food, and offer nutrition supervision. The major offers a comprehensive curriculum that provides a solid foundation in nutritional sciences as well as leadership skills that include communication, problem solving, team dynamics, and interaction with the community. Additional information is available in the Nutritional Sciences handbook.

Learn more about the program goals of the BS in nutritional sciences.

Program Strengths

- RIT has an alliance with Rochester Regional Health, one of the region's premier healthcare providers. The alliance provides a primary network of health care opportunities for student work experiences (co-ops), practicums, and research.
- Our alumni include Dr. Judith Brown, author of a nationally used nutrition text, and Dr. Penny Kris-Etherton, distinguished professor at The Pennsylvania State University and winner of several award for research including dietary fats and health benefits of dark chocolate.
- Active support and interaction with Rochester nutrition and health care communities provide significant opportunities for experiential learning activities in upper division courses
- Articulation with pre-medicine enables completion of all pre-med requirements.
- Award-winning faculty with strong teaching and research skills.
- Small program size and dedicated faculty members ensure individualized student attention
- Strong undergraduate research component.
- Required co-op work experiences in food and nutrition supported by Office of Career Services and Cooperative Education.
- Inclusion of physical-focused assessment using a simulation laboratory.

- Multiple opportunities exist for study abroad for health sciences students, including faculty-led excursions to study the Mediterranean Diet in Croatia and childhood anemia in Ghana. Study abroad opportunities are also available at RIT's global campuses in China, Croatia, Dubai, and Kosovo, or through affiliate programs at other universities.

Nutritional Sciences as a Pathway to Medical School

Nutrition is a powerful tool in managing health. By making positive nutritional changes to one's lifestyle, people suffering from a host of medical issues–from obesity and diabetes to heart disease–can treat and manage them effectively. Diet can also play a powerful role in preventing disease.

In medical school, less than 20 hours of instruction over four years are dedicated to the role of nutrition in medical care. The known impact of lifestyle on chronic diseases highlights the importance of nutrition training for medical professionals. An undergraduate degree in nutritional sciences is an excellent pre-med major. Not only does a nutrition major fulfill the pre-med requirements for course work in biological and physical sciences but it also provides you with comprehensive nutrition knowledge needed to treat and manage health issues. and its powerful role in treating and managing health issues. A background in nutrition, paired with a medical degree, positions you well for providing comprehensive patient care as a medical professional.

Premedical and Health Professions Advisory Program

Learn more about how RIT's Premedical and Health Professions Advisory Program can help you become a competitive candidate for admission to graduate programs in the medical and health professions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

BS Nutritional Sciences/MS Dietetics and Nutrition:

In this combined accelerated dual degree, the nutritional sciences BS degree provides a solid foundation in science, nutrition, dietetics education, and the business of nutrition. The dietetics and nutrition MS enhances your knowledge of medical nutrition therapy, research methods, nutrition research, and the delivery of nutrition intervention through advanced level nutrition courses and supervised experiential learning. You will be eligible and fully prepared to take the registered dietitian nutritionist (RDN) credentialing exam, upon successful completion of the combined BS/MS dual degree program.

BS Nutritional Sciences/MS Health and Well-Being Management:

In this combined accelerated dual degree, the nutritional sciences BS degree provides a strong background in science, nutrition, and an introduction to research methodology and implementation. The health and well-being management MS prepares you for a career in health and well-being management program design, administration, and research. It is the perfect choice if you are interested in going to medical or dental school, or pursuing doctoral studies in nutrition, health promotion, exercise science, or public health.

Student Dietetics and Nutrition Association

The Student Dietetics and Nutrition Association is a student club comprised of nutrition students and supports experiential learning outside of the classroom. The club promotes health and nutrition on campus as well as volunteer opportunities with local organizations. Club activities include volunteering at local food banks and schools, presenting health related information at RIT events, and educational activities for members.

Career Opportunities

Careers in nutrition are diverse, ranging from policy development, communications, and social and community services. You can choose to select electives to become eligible to sit for the Certified Health Education Specialist (CHES), a respected credential in health care education. You will also be well prepared to pursue graduate study for a career in medicine, allied health, or research.

Community Partners

As a nutritional sciences major, the Rochester metropolitan area is your lab for hands-on, experience-based learning. The program has a rich history in the community and partners with a variety of organizations throughout the area to expose students to a wide range of nutrition-related settings. These organizations represent a small sampling of the over 50 community partners with whom we collaborate:

- Abbott Nutrition
- American Dairy Association and Dairy Council
- American Heart Association
- Food and Drug Administration
- Foodlink
- Gates-Chili School District
- Heritage Christian Services
- Hillside Family of Agencies
- Jewish Senior Life
- Genesee Dietetic Association
- On Nutrition
- Ortho-Clinical Diagnostics
- RIT
- RIT Dining Services
- Rochester Psychiatric Center
- Rochester Regional Health
- University of Rochester Medical Center
- Wegmans
- WIC
- YMCA of Greater Rochester

Note: The nutritional sciences major does not meet the educational requirements of the Academy of Nutrition and Dietetics that lead to eligibility to become a Registered Dietitian Nutritionist.

Experiential Learning

Cooperative Education

The nutritional sciences program requires two 400-hour cooperative education experiences in an industry setting related to food and nutrition, or health discipline related to the student's future career goals. Co-op is paid, full-time employment in your field of study. Students do not pay tuition during co-op experiences and the majority of students complete their co-ops in the summer. For transfer students possessing at least an associate's degree, one co-op may be waived.

Students often complete co-ops with job titles such as diet clerk, health/nutrition educator, nutrition assistant, program assistant, cook, food service worker, prep cook/worker, and patient care technician, among others.

A sample of co-op employers in the Rochester area includes Wegmans, Rochester General Hospital, Strong Memorial Hospital, Highland Hospital, St. John's Home, RIT Dining Services, and Monroe Community Hospital. Students are allowed to complete co-ops in their hometown area as well as in other locations throughout the United States and while studying abroad.

Beyond the Classroom

Experiential learning: Nutritional sciences majors engage with a variety of Rochester-based organizations, allowing you to have opportunities to apply what you've learned in the classroom to real-world settings.

Simulation Lab: You will learn how to conduct nutrition-focused physical exams in RIT's state-of-the-art Simulation Lab.

Study abroad: Success in today's global society requires experience and leadership that drives education beyond traditional boundaries. RIT is committed to expanding opportunities for global education, international connections, work experience and cultural exchanges. Study abroad can fulfill a co-op experience, supporting a student's desire to study abroad while satisfying graduation requirements. For information on study abroad opportunities, please visit RIT Global.

The nutritional sciences major offers faculty-led international experiences such as studying the Mediterranean diet in Croatia and travel to conduct a research project on childhood anemia in Ghana.

Curriculum

Nutritional Sciences, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Natural Science Inquiry Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMO-231	Organic Chemistry I (General Education)	3
CHMO-235	Organic Chemistry Lab I (General Education)	1
HSPT-215	Principles of Food Production and Service	3
MATH-101	College Algebra (General Education – Mathematical Perspective A)	3
NUTR-100	Nutr & Dietetics as a Health Profession	1
NUTR-215	Foundations of Nutrition Sciences	3
NUTR-499	Cooperative Education Experience (Summer)	0
PSYC-101	Introduction to Psychology (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Elective	3
Second Year		
CHMB-402	Biochemistry I (General Education)	3
MEDS-250	Human Anatomy and Physiology I (General Education)	4
MEDS-251	Human Anatomy and Physiology II (General Education)	4
NUTR-499	Cooperative Education Experience (Summer)	0
SOCI-102	Foundations of Sociology (General Education)	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	General Education – Ethical Perspective	3
	General Education – Immersion 1	3
	Major Electives	6
	Open Elective	3
Third Year		
NUTR-333	Nutrition Education for Health Professionals	3
NUTR-499	Cooperative Education Experience (Summer)†	0
NUTR-555	Nutrition Throughout the Lifecycle	3
	General Education – Immersion 2	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	Major Electives	12
	Open Elective	3
Fourth Year		
NUTR-510	Integrative Approaches to Health	1
NUTR-525	Medical Nutrition Therapy I	3
NUTR-550	Community Nutrition	3
NUTR-560	Health and Nutrition Research Foundations (WI-PR)	3
	Open Electives	6
	General Education – Elective	3
	General Education – Immersion 3	3
	Major Electives	6
Total Semester Credit Hours		**123**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Cooperative Education (NUTR-499) in the third year is optional. It is required only if co-op in the first and second year is not completed.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Nutritional Sciences, BS degree/Dietetics and Nutrition, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-101	General Biology I (General Education)	3
BIOL-102	General Biology II	3
BIOL-103	General Biology I Lab	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education- Scientific Principles Perspectives)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education)	1
ECON-101	Principles of Microeconomics	3
HSPT-215	Principles of Food Production and Service	3
MATH-101	College Algebra (General Education – Mathematical Perspective A)	3
NUTR-100	Nutr & Dietetics as a Health Profession	1
NUTR-215	Foundations of Nutrition Sciences	3
NUTR-499	Cooperative Education Experience (Summer)	0
PSYC-101	Introduction to Psychology (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Second Year		
ACCT-110	Financial Accounting	3
CHMB-402	Biochemistry I	3
CHMO-231	Organic Chemistry I	3
CHMO-235	Organic Chemistry Lab I	1
MEDS-250	Human Anatomy and Physiology I (General Education)	4
MEDS-251	Human Anatomy and Physiology II (General Education)	4
MGMT-215	Organizational Behavior	3
NUTR-499	Cooperative Education Experience (Summer)	0
	General Education – Ethical Perspective	3
	General Education – Immersion 1	3
	Open Elective	6
Third Year		
HRDE-380	Human Resource Management	3
HSPT-325	Food Innovation Development	3
HSPT-375	Customer Experience Management	3
MEDG-106	Microbiology of Health and Disease	3
NUTR-333	Nutrition Education for Health Professionals (WI)	3
NUTR-510	Integrative Approaches to Health	1
STAT-145	Introduction to Statistics I (General Education - Mathematical Perspective B)	3
	General Education – Immersion 2,3	6
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education - Social Perspective	3
	Open Elective	7
Fourth Year		
NUTR-550	Community Nutrition	3
NUTR-625	Medical Nutrition Therapy I	3
NUTR-626	Medical Nutrition Therapy II	3
NUTR-655	Nutrition Throughout the Lifecycle	3
WSHN-624	Advanced Nutrition Science	3
WSHN-700	Research Methods in Health and Well-being	3
WSHN-710	Health Risk Identification and Management	3
WSHN-715	Food Systems Management	3
WSHN-770	Community and Public Health Supervised Experiential Learning	3
WSHN-775	Culinary and Food Systems Management Supervised Experiential Learning	3
	Graduate Program Elective	3
Fifth Year		
HLTH-746	Leading Health Systems II	3
WSHN-702	Dissemination and Implementation Science for Health and Well-being	3
WSHN-730	Nutritional Assessment and Counseling	3
WSHN-780	Clinical Nutrition Supervised Experiential Learning	6
WSHN-790	Health & Well-being Management Thesis	6
	Statistics Elective†	3
Total Semester Credit Hours		**165**

Nutritional Sciences, BS degree/Health and Well-being Management, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education – Natural Science Inquiry Perspective)	3
CHMG-145	General & Analytical Chemistry for Engineers (General Education – Natural Science Inquiry Perspective)	1
CHMO-231	Organic Chemistry I (General Education)	3
CHMO-235	Organic Chemistry Lab I (General Education)	1
HSPT-215	Principles of Food Production and Service	3
MATH-101	College Algebra (General Education – Mathematical Perspective A)	3
NUTR-100	Nutr & Dietetics as a Health Profession	1
NUTR-215	Foundations of Nutritional Science	3
NUTR-499	Cooperative Education Experience	0
PSYC-101	Introduction to Psychology (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education - Elective	3
	General Education - Social Perspective	3
	General Education - Scientific Principles Perspective	3
Second Year		
CHMB-402	Biochemistry I	3
MEDS-250	Human Anatomy and Physiology I (General Education)	4
MEDS-251	Human Anatomy and Physiology II (General Education)	4
NUTR-499	Cooperative Education Experience	0
SOCI-102	Foundations of Sociology	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	General Education – Ethical Perspective	3
	General Education – Immersion	3
	Open Elective	3
	Major Electives - Undergraduate	6
Third Year		
NUTR-333	Nutrition Education for Health Professionals (WI)	3
NUTR-555	Nutrition Throughout the Lifecycle	3
	General Education – Immersion	3
	Major Electives - Undergraduate	12
	General Education – Global Perspective	3
	General Education - Artistic Perspective	3
	Open Elective	3
Fourth Year		
NUTR-510	Integrative Approaches to Health	1
NUTR-525	Medical Nutrition Therapy I	3
NUTR-560	Health and Nutrition Research Foundations (WI-PR)	3
NUTR-650	Community Nutrition*	3
	General Education - Elective	3
	General Education - Immersion	3
	Open Electives	6
	Major Elective - Undergraduate	3
	Major Elective - Graduate Elective*	3
Fifth Year		
WSHN-700	Research Methods in Health and Well-being	3
WSHN-701	Health and Nutrition Education and Evaluation	3
WSHN-702	Dissemination and Implementation Science for Health and Well-being	3
	Choose one of the following:	
WSHN-797	Health & Well-being Management Project	3
WSHN-790	Health & Well-being Management Thesis	3
	Choose one of the following:	
HLTH-710	Health Care Economics and Policy	3
WSHN-710	Population Health, Risk, and Identification Management	6
	Choose one of the following:	
WSHN-790	Health & Well-being Management Thesis	3
	Graduate Elective	3
	Statistics Elective	3
	Graduate Elective	6
Total Semester Credit Hours		**150**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Statistics Elective can be fulfilled with either STAT-614, MATH-655, or PSYC-640.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is preferred.
- 2-3 years of science. Biology and chemistry are required.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, and math. Science courses required for nutritional sciences major.

Appropriate associate degree programs for transfer

Dietetics or nutrition, food service management, or liberal arts

Please note: The nutritional sciences program has articulation agreements with the following institutions:

- Erie Community College
- Finger Lakes Community College
- Genesee Community College
- Hudson Valley Community College
- Monroe Community College
- Onondaga Community College

Learn more about transferring credits and additional information about transferring to RIT by visiting the Transfer Admissions website.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Physician Assistant, BS/MS

www.rit.edu/study/physician-assistant-bs-ms
Zach Anderson,
585-475-5151, zjachp@rit.edu

Program overview

RIT's physician assistant program prepares you to elicit medical histories, conduct physical examinations, order laboratory and radiological testing, diagnose common illnesses, determine treatment, provide medical advice, counsel and educate patients, promote wellness and disease prevention, assist in surgery, and perform casting and suturing.

Physician assistant duties vary depending on the state and specialty in which they practice. In most states, including New York, physician assistants may prescribe medication. Examples of specialties include (but are not limited to): internal medicine, family medicine, emergency medicine, geriatrics, pediatrics, women's health, behavioral health, general surgery, orthopedics, neurosurgery, and neonatology. Clinical rotations (internships) during students' last year provide the opportunity to explore these varied disciplines.

Obtaining the skills and knowledge to practice as a physician assistant is a complex process. A carefully planned course of study has been developed to offer a balance of didactic and clinical knowledge. A significant component of the educational process is the socialization of the student to the character, performance, and role of a provider of medical care. The evaluation of the student's adaptation to this role depends on the experienced judgment of individual faculty members. It is important to recognize that these subjective judgments may transcend or be independent of traditional paper and pencil tests and other similar objective measures of academic performance. Physician assistant education involves instruction from practicing clinicians with unpredictable schedules.

Many opportunities, in the form of evaluations, are provided for the measurement of progress by both faculty and student. In addition to a fully staffed Academic Support Center, individual instruction and tutoring may be provided in certain instances. Every effort is made to provide a complete learning environment. Even though a variety of experiences, learning situations, and tools are provided by the Program, the single greatest factor, motivation, is essentially up to the student.

- Accreditation Update–November 6, 2019
- Physician Assistant Program Successes (Success in meeting program goals will be updated during summer term.)
- NCCPA Pass Rate Report
- Physician Assistant Student Attrition Table

Mission

RIT's physician assistant program provides a foundation of science and liberal arts; and prepares students to provide compassionate, patient-centered healthcare. The program is committed to developing the ethical values, medical knowledge, professionalism, and interpersonal communication skills essential for inter-professional, team-based, clinical practice.

Goals

Medical Knowledge: Graduates will demonstrate core medical knowledge of established and evolving biomedical and clinical sciences and apply this knowledge to patient care.

Interpersonal and Communication Skills: Graduates will demonstrate interpersonal and communication skills that result in effective information exchange with patients, families, physicians, and other members of the healthcare team.

Patient Care: Graduates will provide effective, safe, high-quality, and equitable patient care in diverse settings and across the life span.

Professionalism: Graduates will practice with integrity, ethical and legal responsibility, and sensitivity to diverse patient populations.

Practice-based Learning and Improvement: Graduates will critically analyze their practice experiences with Evidence-Based Medicine (EBM) and quality assurance processes to improve patient care.

Systems-based Practice: Graduates will demonstrate awareness of and responsiveness to healthcare systems while keeping the patient at the center of cost-effective, safe care. (Adapted from the Competencies for the Physician Assistant Profession, written by the AAPA, ARC-PA, PAEA, and NCCPA, 2012)

Philosophy: The educational philosophy of the physician assistant program is to provide all students with the necessary liberal arts and basic science foundation necessary to build solid medical knowledge and humanistic skills by which to ultimately provide high-quality patient care to future patients. The faculty views the responsibilities of role modeling and mentoring as critical to the success of assimilating students to the realities and responsibilities of medicine today. The educational philosophy incorporates the attitudes of respect for individual patients into critical decision-making through the assimilation of appropriate interpersonal skills, compassion, and respect and reverence for the position of physician assistant.

Plan of Study

The physician assistant major is offered as a BS/MS degree program, which enables students to earn both a bachelor's degree and a master's degree in five years. The curriculum is divided into a pre-professional phase (years 1 and 2), which includes course work in the basic sciences, mathematics, general education, and liberal arts; and a professional phase, (years 3, 4, and 5), which features didactic medical education and culminates in clinical rotations in which students apply their medical knowledge in a series of rotations through various disciplines of medicine.

Technical Standards

Students in the physician assistant program must possess certain capabilities and skills, with or without reasonable accommodation. These include the intellectual ability to learn, integrate, analyze, and synthesize data. They must have a functional use, with or without accommodation, of the senses of vision, hearing, and equilibrium. Learn more about the technical standards required of a successful physician assistant major.

Graduate Competencies

The physician assistant program has outlined functions and tasks for performing a range of skills you are expected to master as a graduate of the program. Learn more about graduate competencies required of a successful physician assistant major.

Program Progression

Students are matriculated into one of the first three years, upon their acceptance into the physician assistant major. Students must complete academic requirements to progress on to the next academic year. Students must meet all program academic requirements, policies, and standards to advance from the pre-professional phase to the professional phase of the program. Once matriculated into the pre-professional phase, students are permitted to take a limited number of courses at another institution during the summer, pending program approval. It is important, however, that students take core science courses at RIT to ensure a consistent educational experience. Students are not permitted to skip class years (i.e. first to third year) once matriculated in the major.

Experiential Learning

Clinical Rotations

Clinical rotations include a five-week experience in various disciplines of medicine, providing students with the opportunity to apply the basic principles of medicine to hospital-based and ambulatory patient care settings. Students are assigned to a primary preceptor (physician/physician assistant) and are exposed to a wide variety of acute and chronic medical problems. The emphasis is on data gathering, physical examination, differential diagnosis, patient management, maintenance of medical records, performance of diagnostic and therapeutic procedures, and the provision of patient education and counseling. Mandatory rotations are in the fields of internal medicine, family medicine, geriatrics, orthopedics, emergency medicine, women's health, pediatrics, general surgery, and behavioral health. Students also select one elective rotation, which enables them to customize their experience according to their medical area of interest.

The clinical rotations represent the integration and combination of the didactic and clinical phases of the physician assistant program. A great deal of planning has gone into creating a learning environment that will allow the student to obtain the high-level skills required for practice as a physician assistant. The affiliates (hospitals and office-practices) are busy places offering a variety of services. It is the responsibility of the student to explore and learn as much as possible during this very important year. You will be assigned a preceptor for each rotation by the program. This will generally be a physician, physician assistant program, or nurse practitioner who is responsible for your actions and educational experience. In general, the student is expected to participate in each and every aspect of the department or office where assigned.

The physician assistant program is fortunate to have the support of the local and neighboring medical communities for providing clinical sites offering a wide array of clinical experiences. Program faculty provides rotation assignments for all students. The program cannot assure the student assignment to a clinical affiliate within the immediate Rochester area or other desired area. Several of these sites are located some distance from the RIT main campus. The physician assistant program makes every attempt to assist the student in finding suitable housing. However, ultimately the responsibility for housing, travel, and food are the student's responsibility.

Curriculum

Physician Assistant, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year (Pre-professional)		
BIOL-101	General Biology I (General Education)	3
BIOL-102	General Biology II (General Education)	3
BIOL-103	General Biology I Lab (General Education)	1
BIOL-104	General Biology II Lab (General Education)	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	1
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing	3
	General Education – Elective	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
Second Year (Pre-professional)		
CHMB-240	Biochemistry for Health Sciences (General Education)	3
MEDS-250	Human Anatomy and Physiology I (General Education)	4
MEDS-251	Human Anatomy and Physiology II (General Education)	4
MEDS-417	Clinical Microbiology	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	Open Elective	3
	General Education – Social Perspective	3
	General Education – Immersions 1,2,3	9
Third Year (Professional)		
PHYA-401	History & Physical Diagnosis I	4
PHYA-402	History & Physical Diagnosis II	4
PHYA-405	Pathophysiology I	2
PHYA-406	Pathophysiology II	2
PHYA-415	Pharmacology I	1
PHYA-416	Pharmacology II	2
PHYA-419	Advanced Gross Anatomy	2
PHYA-420	PA Seminar	1
PHYA-422	Clinical Medicine I	5
PHYA-423	Clinical Medicine II	5
PHYA-430	Clinical Genetics	2
Fourth Year (Professional)		
PHYA-409	Clinical Lab Medicine	1
PHYA-417	Pharmacology III	2
PHYA-421	Diagnostic Imaging	2
PHYA-424	Clinical Medicine III	5
PHYA-440	Society and Behavioral Medicine	3
PHYA-510	Hospital Practice	4
PHYA-520	Clinical Integration	4
PHYA-530	Clinical Research Methods (WI-PR)	2
PHYA-550	Procedural Clinical Skills	3
PHYA-560	Healthcare Policy & Law	2
PHYA-710	Graduate Project I (WI-PR)	2
PHYA-750	Pediatrics	4
PHYA-751	Internal Medicine	4
PHYA-752	Women's Health	4
PHYA-761	Professional Practice I	2
	Open Electives	6
Fifth Year (Professional)		
PHYA-720	Graduate Project II	2
PHYA-753	Emergency Medicine	4
PHYA-754	Surgery	4
PHYA-755	Orthopedics	4
PHYA-757	Behavioral Health	4
PHYA-758	Family Medicine	4
PHYA-759	Elective Rotation	8
PHYA-762	Professional Practice II	2
PHYA-763	Professional Practice III	2
Total Semester Credit Hours		**181**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Accreditation

Physician Assistant Accreditation Update

The RIT physician assistant program had an accreditation site visit in June 2019 and the Accreditation Review Commission on Education for Physician Assistants (ARC-PA) met in late September 2019. The following is the official ARC-PA announcement regarding RIT's accreditation status:

The Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA) has granted Accreditation-Continued status to the Rochester Institute of Technology Physician Assistant Program sponsored by Rochester Institute of Technology. Accreditation-Continued is an accreditation status granted when a currently accredited program is in compliance with the ARC-PA Standards.

Accreditation remains in effect until the program closes or withdraws from the accreditation process or until accreditation is withdrawn for failure to comply with the Standards. The approximate date for the next validation review of the program by the ARC-PA will be September 2027. The review date is contingent upon continued compliance with the Accreditation Standards and ARC-PA policy.

The program's accreditation history can be viewed on the ARC-PA website.

Admission requirements

The physician assistant program is a highly competitive. The number of openings for all students is limited by accreditation standards.

In addition to the university's general admission procedures, the physician assistant major requires the completion of a supplemental data packet, application, and a personal admission interview (by invitation). The program requires a personal interview prior to admission. Interviews are by invitation only. Not all applicants are extended an invitation and not all applicants who are invited to interview are accepted into the program. The interview performance is viewed as one of the most important aspects of your application to the program. Careful attention is given to ranking and interviewing first-year and transfer applicants in comparison to their peers. In addition, the program strongly encourages applicants to have participated in some degree of patient care experience and/or shadowing of physician assistants.

There are approximately 30-36 students enrolled in each class year of the program. Therefore, the number of openings for all students is limited and competitive. All prospective applicants must have a minimum cumulative GPA of 3.0 (on a 4.0 scale) to qualify for admission and must maintain a minimum GPA of 3.0 once enrolled in the program.

It also is important to note that the minimum grade point average for acceptance into the physician assistant major is 3.0 (on the basis of a 4.0 maximum) for both high school and transfer students. In order to graduate from the major, a GPA of 3.0 or better must be maintained.

Health Care Experience

While health care experience is not an absolute requirement for admission, the program faculty highly suggest that candidates volunteer in hospitals, nursing homes, hospice and/or health care facilities, as applicable. In addition, shadowing health care professionals (PAs, MDs) in clinical arenas is highly suggested as a means of observing the role of PAs and other members of the health care team in providing care to patients.

Transfer Admission

Qualified transfer students are accepted into the major, on a space available basis. Prior health care experience and/or shadowing are strongly recommended. Transcript evaluations and rendering of transfer credit are addressed at the time of admission only. Anatomy and physiology courses must be taken within the last five years prior to matriculation to be eligible for transfer. All pre-professional course work must be completed to continue on, or to be considered for entry, into the professional phase of the major. Please contact the Office of Undergraduate Admissions for information on transfer requirements.

Advanced Placement

In the pre-professional phase, advanced placement (AP) credit for general education courses is evaluated and approved by the academic advisors. AP credit for calculus, statistics, and university electives is awarded, as applicable, within the major. AP credit is not accepted for biology and chemistry as course substitutions. Advanced placement or credit for experiential learning is not awarded for courses in the professional phase of the major.

Physician Assistant Student Employment and Co-curricular Activities

Many PA students work during the first two years of the program. Most of these students find that balancing academics, co-curricular activities, and working 8-10 hours/week is possible. Nonetheless, attention must always remain focused on the academic expectations of the PA program, which require students to maintain a minimum term and cumulative GPA of 3.0 (BS/MS degree) throughout the program. Given the rigorous program of study, students in the professional phase of the program are strongly advised meet with their academic advisor to discuss their participation in outside employment and co-curricular activities. Students in the professional phase, including clinical rotations, must ensure that employment and/or co-curricular activities do not interfere with academic preparation, performance, clinical responsibilities, and scheduling as per clinical affiliates and program requirements. Outside commitments that are not managed effectively can dramatically affect successful progression within the program and on clinical rotations. Given the rapidly changing environment in day-to-day clinical activities and responsibilities, patient cases and/or clinical responsibilities must be given paramount priority.

Service Work

PA students participating in clinical service work are responsible for ensuring that those with whom they come into contact understand their role as PA students. At no time should PA students, participating in clinical service work, represent themselves, take the responsibility of, or the place, of qualified staff. The exception is when the student is under the guidance and direction of their instructor/preceptor for that given rotation block in which students' status must be disclosed. PA students are never to serve as substitutions for regular staff and/or health professionals.

Tuition Fee Rates

- Current tuition rates can be found at: https://www.rit.edu/sfs/tuition-and-fees
- RIT Refund policies can be found at: https://www.rit.edu/fa/sfs/refund

Physician Assistant Program Summary of Costs

Aside from tuition costs, there are additional costs that are incurred within the professional phase of the program. A summary of costs is provided below, but these calculations are current estimates, and are subject to change.

Housing Expenses–In the fifth year of the program, students complete ten clinical rotations which require, from time to time, that the student be away from the Rochester area. Sometimes these clinical sites are within driving distance, but other times, the student will need to stay near the clinical site for the five weeks of the rotation. Because of this, there may be slightly elevated housing costs during this fifth year. The PA program assists students in finding suitable housing during this clinical year, but ultimately the responsibility for housing, travel, and food, is that of the student. Students are not reimbursed during their time on clinical rotations. Senior students are considered full time during this clinical training year and are responsible for tuition costs. These costs vary according to the needs of individual students. Suitable living on-campus (dorms, apartments, etc.) are generally available for average housing fees. Please refer to RIT Housing for more information.

Transportation and Parking–In the professional phase of the program (years 3, 4, 5), students can expect to be off campus a portion of the time. The student is responsible for transportation during these years. Because of this, a car is recommended in the start of the third year, and certainly during the fifth year. Parking fees may be incurred as students begin clinical training in hospitals. Car-pooling is recommended, when applicable.

Textbooks–In the professional phase of the PA Program (years 3, 4, 5), the coursework and clinical experiences are exclusively medical in nature. Additional textbooks are required in various areas of didactic and clinical instruction. These additional books and reference materials typically run around $2,000, but vary from student to student.

Diagnostic Equipment–Each student is required to purchase diagnostic equipment for the start of the professional phase (year 3) of the program. The student is expected to bring his/her own equipment to classes in good working order. The PA program works with various medical suppliers to ensure that equipment costs to the third year students will be the lowest possible, while ensuring their quality. If buying new equipment, it would be wise to wait until this time to purchase the equipment. These items generally range $800 to $1,200. This will be a one-time only cost, and these items will be useful for many years to come in the clinical fields of medicine.

PA Clinical Knowledge Rating and Assessment Tool (PACKRAT) Exams–A written competency examination will be given to students in the fourth and fifth years of the Program. The Physician Assistant Clinical Knowledge Rating and Assessment Tool (PACKRAT) is a nationally recognized competency examination for PA students. This standardized examination provides excellent feedback to students and faculty regarding comprehensive knowledge bases and problem-solving abilities of the students. The content and approach has been created to simulate the computer-based Physician Assistant National Certifying Exam (PANCE). Many students have found this to be excellent preparation for clinical rotations and the PANCE. The cost to each student is currently $45/exam.

End of Rotation Exams–A written exam will be given to students at the completion of each core rotation. The End of Rotation Exam™ is a computerized, standardized exam assessing medical knowledge of the student. The cost is currently $35/exam.

End of Curriculum Exam–All PA students must demonstrate the knowledge, professionalism, interpersonal and patient care skills required for entry into the PA profession. This evaluation, facilitated by our program faculty, will be done within four months prior to graduation from the program. This summative evaluation will comprise assessments in the following patient care areas: clinical and technical skills, clinical reasoning and problem-solving abilities, interpersonal skills, medical knowledge, and professional behaviors. In addition, an evaluation of medical knowledge will be completed by each student as part of the Summative Evaluation. The Physician Assistant Education Association (PAEA) End of Curriculum™ exam is a computerized, standardized exam. The cost to each student is currently $99.

PANCE Board Review Course–A three-day PANCE exam review course is arranged by the program and attendance is required. This course will provide a system-based approach review and over 1,000 practice board questions with a 100 percent guarantee. The cost is currently $245.

Criminal Background Check–In accordance with various state laws and regulations, most of our clinical affiliates require PA students to undergo a criminal background check prior to beginning a clinical rotation. A PA student may not be allowed to participate in a clinical rotation(s), by the clinical affiliates, based on the results of a criminal background check. As a PA professional advances in his/her health care career, s/he can expect regular criminal background checks and credential verification as part of the participation, hiring, and employment process. The RIT PA Program requires that all PA students have an initial criminal background check prior to entering the professional phase of the program (year 3) and once again prior to the start of clinical rotations (end of year 4). The cost to each student for these screenings is approximately $150.

Drug Testing–In accordance with various state laws and regulations, some clinical affiliates may require PA students to undergo drug testing prior to beginning a clinical rotation. These additional authorizations and their associated fees must be completed by the student at the students' expense. A PA student may not be allowed to participate in a clinical rotation(s), by the clinical affiliates, based on the results of this drug testing. As a PA professional advances in his/her health care career, s/he can expect regular, random drug testing, and credential verification as part of the participation, hiring, and employment process.

Basic and Advanced Cardiac Life Support (BLS/ACLS) Certification–Students are required to have current CPR /ACLS certification prior to the start of clinical rotations in the fifth year. This training is arranged through the PA Program in conjunction with the American Heart Association and hospital affiliates. The cost for this certification is $70 to $150.

Clinical Affiliate Registration/Subscription–Beginning May 2021, each senior student on clinical rotations will be required to pay approximately $60 as a registration/subscription fee for the administrative services rendered by the clinical affiliate. This fee will cover the ten clinical rotations required.

Physical Examinations and Immunizations–A history and physical examination (including various blood work, titers, TB testing, and current immunizations) are required prior to the start of clinical rotations. TB testing is also required prior to the start of the third year. Students must arrange for these examinations several months in advance of the start of clinical rotations. Costs may range from $300 to $400 depending on insurance coverage. Although the PA program cannot mandate that each student obtain the Hepatitis B vaccine, however it is very strongly recommended prior to the start of the third year. Lack of this vaccination may preclude students from most clinical training sites. Students may obtain this three injection vaccination series at the RIT Student Health Center or through private medical coverage. Costs may vary dependent upon health insurance coverage.

FIT Testing–Prior to the start of clinical rotations students are required to undergo FIT testing which tests the actual size and provider's ability to use a respirator mask device that protects healthcare workers

from inhaling harmful substances. The FIT testing will cost approximately $60 and students in some clinical disciplines will need to purchase personal I-95 protective masks for a nominal cost prior to beginning clinical rotations.

Optional Costs

Student memberships to the following professional organizations:

- Rochester Regional PA Association (RRPAA)–$10 annually
- New York State Society of PAs (NYSSPA)–$75 for the duration of your student enrollment
- American Academy of PAs (AAPA)–$75 for the duration of your student enrollment

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Financial Aid Changes During the Program

Financial aid will change over the course of the Physician Assistant BS/MS program. When you are enrolled as an undergraduate student, you will be billed undergraduate tuition and fee rates, and receive undergraduate financial aid. Once you advance to graduate status, your tuition, fees, and financial aid switch to graduate tuition and aid and your undergraduate financial aid will no longer apply.

Learn more about this change

Faculty

Dean's Office

Yong "Tai" Wang, BS, MS, Wuhan Sports University (China); MA, Ball State University at Muncie; Ph.D., University of Illinois at Urbana-Champaign, FACSM—Dean

Daniel B. Ornt, BA, Colgate University; MD, University of Rochester—Professor

Carla Stebbins, BA, University of Northern Iowa; MHA, Des Moines University; Ph.D., Iowa State University— Associate Dean

Department of Clinical Health Professions

Hamad Ghazle, BS, Rochester Institute of Technology; MS, Ed.D., University of Rochester, RDMS, RVT, APS—Professor; Head, Department of Clinical Health Professions; Program Director, Diagnostic Medical Sonography Program

Cassandra Berbary, BA, State University College at Geneseo; MS.Ed., Ph.D., Duquesne University—Research Assistant Professor; Director of Internship Training

Cory Crane, BA (anthropology), BA (psychology), University of Michigan; MS, Ph.D., Purdue University—Associate Professor; Associate Chief of Training and Research Faculty

Caroline Easton, BS, Rochester Institute of Technology; Ph.D., University of Connecticut/Yale School of Medicine—Professor; Chief Psychologist

Jodie Crowley, BS, Rochester Institute of Technology, RDMS, RVT—Lecturer, Diagnostic Medical Sonography Program

Melanie Geiger, BS, MS, Daemen College; MSBA, University of Rochester, PA-C— Lecturer; Assistant Clinical Coordinator, Physician Assistant Program

Heather Grotke, BS, Rochester Institute of Technology; MS, Daemen College, PA-C—Senior Lecturer; Academci Coordinator, Physician Assistant Program

Rupa Kalahasthi, BA, St. Xaviers's College Mumbai (India); MA, University of Mumbai (India); M.Psy., Psy.D., George Washington University—Research Assistant Professor; Deputy Director of Internship Training

BethRae King, BS, State University College at Brockport; MS, Rochester Institute of Technology, RDCS—Senior Lecturer, Echocardiography Concentration Coordinator, Diagnostic Medical Sonography Program

Paul Levy, MD, The Ohio State University—Distinguished Lecturer; Medical Director, Physician Assistant Program

Heidi Miller, BS, Alderson Broaddus College; MPH, University of Rochester, PA-C—Professor, Physician Assistant Program

Joseph Nicholas, BA, Cornell University; MPH, State University of New York at Albany; MD, University of Pittsburgh—Lecturer; Medical Education Consultant, Physician Assistant Program

Ashley Nichols, BS, MS, Daemen College, PA-C— Lecturer; Clinical Coordinator, Physician Assistant Program

John B. Oliphant, BA, Messiah College; M.S.Ed., Elmira College; MHP, Northeastern University; Ph.D., Niagara University, ATC, PA-C, CPH—Associate Professor, Physician Assistant Program

Celeste Sangiorgio, BA, Hunter College; MA, Ph.D., St. John's University—Research Assistant Professor

Janice M. Shirley, BS, SUNY Empire State College; MBA, University of Massachusetts Isenberg; MPH, John Hopkins University; Ph.D., Nova Southeastern University; PA-C, DFAAPA—Assistant Professor, Physician Assistant Program

Courtney Stevens, BS, Rochester Institute of Technology, RDMS, RDCS— Lecturer; Clinical Coordinator; Diagnostic Medical Sonography Program

Jonathan Tory Toole, BA (psychology), BA (religion), University of Georgia; MA, New York University; MS, Ph.D., Nova Southeastern University—Research Assistant Professor

Nancy Valentage, BS, Gannon University; MS, Rochester Institute of Technology, PA-C—Professor; Associate Director, Physician Assistant Program

Department of Medical Sciences, Health, and Management

James Perkins, BA, Cornell University; MFA, Rochester Institute of Technology; ABD, University of Rochester, CMI, FAMI—Distinguished Professor; Head, Department of Medical Sciences, Health, and Management; Graduate Program Director, Medical Illustration Program

Paula Buchanan, BS, BA, Tulane University; MBA, MPH, University of Alabama at Birmingham; ScD, Jacksonville State University—Future Faculty Fellow

Richard L. Doolittle, BA, University of Bridgeport; MS, Ph.D., University of Rochester—Professor

Michele Lennox, AAS, Rochester Institute of Technology—Lecturer, Biomedical Sciences Program

Robert Osgood, BS, Jackson State University; MS, Ph.D., University of Southern Mississippi—Associate Professor; Program Director; Biomedical Sciences

Elizabeth Perry, BS, State University College at Brockport; MS, Ph.D., University of Rochester—Senior Lecturer

Patricia Poteat, BA, University of Rochester; MS, Rochester Institute of Technology; Ph.D., University of Rochester—Senior Lecturer

Carla Stebbins, BA, University of Northern Iowa; MHA, Des Moines University; Ph.D., Iowa State University— Principal Lecturer; Program Director, Health Systems Management

Laurence I. Sugarman, BA, Washington University in St. Louis; PA-C, St. Louis University; MD, University of Missouri-Columbia—Research Professor

Bolaji N. Thomas, BSc, MSc, Ph.D., University of Lagos (Nigeria)—Professor, Biomedical Sciences

Wegmans School of Health and Nutrition

Barbara A. Lohse, BS, University of Wisconsin-Eau Claire; MS, RDN, University of Wisconsin-Stout; Ph.D., University of Wisconsin-Madison, CDN, LDN—Professor; Head, Wegmans School of Health and Nutrition

Brenda Ariba Zarhari Abu, BSc, University for Development Studies (Ghana); MPhil, University of Ghana (Ghana); Ph.D., University of the Free State (South Africa); RDN, Iowa State University—Assistant Professor

William S. Brewer, BS, State University College at Cortland; MS, Empire State College—Program Director; Senior Lecturer

Kristie O'Connor, BS, State University College at Fredonia; BS, Rochester Institute of Technology; RDN, Cleveland Clinic Foundation; MLA, Harvard University—Lecturer; Graduate Program Director, Dietetics and Nutrition Graduate Program

Jason Rich, BA Binghamton University; MA Concordia University Irvine; Ed.D., University of Western States, CMPC, CSCS, CPSS -- Lecturer.

Elizabeth H. Ruder, BS, Cornell University; RDN, Cleveland Clinic Foundation; Ph.D., Pennsylvania State University; MPH, Johns Hopkins University—Associate Professor; Program Director, Nutritional Sciences

University Studies

James Hall, Dean of University Studies; Executive Director, School of Individualized Study
rit.edu/universitystudies/

Programs of Study

Online study option available

University Studies is a collaboratory of high touch, student-first programs that emphasize autonomy, leadership, service, and the pursuit of a fulfilling personal and professional life. Partner programs meet students where they are and assist in the articulation of short and long term goals and assist them in the making of curricular and extra-curricular choices that enhance opportunities. Students who take advantage of University Studies' opportunities build out high quality professional networks that promote resilience and life satisfaction. University Studies is comprised of:

- The School of Individualized Study
- The RIT Honors Program
- Veterans Upward Bound
- ROTC–Army
- ROTC-Air Force

School of Individualized Study

Through the School of Individualized Study, students interested in more than one area of study have the option of creating personalized undergraduate programs directly related to their interests and aspirations.

The diverse nature of these customized degree programs values student's ideas and provides an interdisciplinary approach to learning that can be applied to the professional environment.

Like the school itself, students participating in the school are anything but typical. Some are full-time undergraduate students with nontraditional ideas about what they want in a college degree, while others are adults with families and careers attending classes online or in the evening. The school offers a BS degree, an AAS degree, and a diploma.

Please visit the school's website–**www.rit.edu/sois**–for in depth information on academics, advising, faculty, facilites, and more.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

In addition to the admission requirements of the university, the school has added enrollment policies that must be followed.

Enrollment policies: The school allows a student to enroll in any course for which he or she has sufficient background. Many courses have prerequisites that students are expected to meet before enrolling.

Academic advisors are available throughout the year to answe questions regarding course or program choices. In support of and in compliance with RIT's policy of assuring competency in written communication, all students matriculated in a BS degree program must satisfy a writing competency requirement. Information about this requirement, and the various methods for satisfying it, is available at the SOIS office or by visiting the school's website.

Students matriculated in the school's baccalaureate degree program are expected to complete the degree within seven years.

Financial aid and scholarships

Please refer to the Financial Aid and Scholarships section of this bulletin for information regarding financial aid, scholarships, loans, and grants.

Applied Arts and Sciences, AAS

www.rit.edu/study/applied-arts-and-sciences-aas
School of Individualized Study
585-475-2234, sois@rit.edu

Program overview

Jobs that require multidisciplinary, hybrid skills sets not traditionally associated with one occupation are growing at twice the rate of the overall job market, are higher paying than their more specialized counterparts, and are immune to the threat of automation.

RIT's online associate of science in applied arts and sciences is a customizable degree for students who would like to combine different disciplines or topic areas tailored to their career goals and interests. This program is also ideal for students who may have prior college learning or would like to change or expand their areas of expertise. In this program, you will work closely with an advisor to design your plan of study, all tailored around your career aspirations and goals.

While this associate degree is a stand-alone credential valued by employers, the course work may also be applied to RIT's bachelor of science in applied arts and sciences.

Applied Arts and Sciences Degree: Online or On-Campus

The applied arts and sciences AAS degrees offers you an opportunity to create an individualized undergraduate program of study. The degree requires you to complete at least 60 credit hours of course work comprised of general education courses along with course work in one or two professional concentration area. Each concentration is customized by you, with guidance and advice from your academic adviser, and crafted from courses that provide you with expertise in specific areas of study. Courses may be chosen from throughout RIT's nine colleges and from nearly all of our degree programs. A sampling of concentration areas include:

- Business Studies
- Communication
- Computer Graphics
- Criminal Justice
- Health Systems Administration
- Leadership
- Literature
- Organizational Change and Leadership
- Project Management
- Psychology
- Sociology
- Technical Communications
- Web Design and Development
- Women and Gender Studies

The applied arts and science degree may be completed on campus, online, or by combining on-campus and online course work.

Curriculum

Applied Arts and Science, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
SOIS-101	Individualized Study Seminar	1
UWRT-150	First Year Writing: FYW: Writing Seminar (WI) (General Education)	3
	General Education - Artistic Perspective	3
	General Education- Social Perspective	3
	Open Electives	6
	Professional Concentration Courses	14
Second Year		
SOIS-201	Paradigms & Worldviews (General Education)	3
SOIS-202	Individuals & Society (General Education)	3
	General Education- Ethical Perspective	3
	General Education- Global Perspective	3
	General Education - Social Perspective	3
	Professional Concentration Courses	15
Total Semester Credit Hours		**60**

Please see General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.

Admission requirements

First-Year Admissions

This degree offers students the opportunity to create individualized undergraduate programs of technical and professional study. Applicants should speak directly to a first-year admissions counselor in the Office of Undergraduate Admissions for more information.

Transfer Admissions

This program offers students the opportunity to create individualized undergraduate programs of technical and professional study through its applied arts and science program. The applied arts and science program is particularly appropriate for individuals who have prior college-level learning, are interested in changing majors, have unique ideas about how they want to design their academic areas of study, or want to prepare themselves for a career that requires skills and expertise from several disciplines. Applicants should speak directly to a transfer admissions counselor in the Office of Undergraduate Admissions for more information.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Applied Arts and Sciences, Diploma

www.rit.edu/study/applied-arts-and-sciences-diploma
School of Individualized Study
585-475-2234, sois@rit.edu

Program overview

The applied arts and sciences major offers students the opportunity to create individualized undergraduate programs of study through three levels of study: a bachelor of science degree, an associate of applied science degree, and a diploma. Further information for all three levels can be found under the applied arts and sciences BS program.

Curriculum

Applied Arts and Science, DP degree, typical course sequence

COURSE	SEMESTER CREDIT HOURS
First Year	
Professional Concentration Courses	24
Total Semester Credit Hours	**24**

Admission requirements

First-Year Admissions

This program offers students the opportunity to create individualized undergraduate programs of technical and professional study. Applicants should speak directly to an admissions counselor in the Office of Undergraduate Admissions for more information.

Individualized Program, BS

www.rit.edu/study/individualized-program-bs
School of Individualized Study
585-475-2234, sois@rit.edu

Program overview

A Dynamic, Customized Individualized Studies Major

If you find yourself drawn to a collection of interests that don't fit neatly into a conventional academic program, RIT's bachelor of individualized studies may be for you. This program, formerly known as applied arts and sciences, is offered through the School of Individualized Study and allows you to customize an academic program around your interests, goals, and career aspirations.

With RIT's rich and diverse academic portfolio—which includes 100+ undergraduate programs, options, and concentrations—you can combine a variety of courses to create concentrations that provide you with the skills and knowledge you need to attain your professional ambitions.

What is Individualized Study?

An individualized studies degree is all about you. It's focused on your interests, your passions, and your career goals. And, it's an opportunity for you to create a specialized degree that's tailored around the knowledge and skills you want to learn, and that fit your personal ambitions.

Students in the School of Individualized Study are unique. But they all share one common trait: their interests don't fit neatly into a traditional degree program. They have ideas about what they want to study, and where they want to go after they graduate. They need a roadmap on how to structure a degree program that gets them where they want to go.

Creating Your Own Major

It sounds complicated. In reality, it's an easy, guided experience that helps you identify your interests, determine your career goals, develop an academic plan of study, select the right courses, and put a plan in motion. You'll design a customized degree that fits what you want to do and where you want to go.

How Does Individualized Study Work?

You'll start out by meeting with one of the academic advisors in the School of Individualized Study, who will spend time learning about you. They'll talk to you about areas of study that you like and don't like, and listen as you share your career goals and aspirations. Next, they'll talk to you about course selection and help you identify what classes you need to take to gain the skills you're looking to acquire. Our advisors will connect you to faculty members so you can learn about exciting career options. As we work together to map out an individualized studies bachelor's degree, your advisors will help develop concentrations and guide you on adding experiences that will expand your knowledge, including co-ops and internships, research opportunities, study abroad, and more. These will round out your education and provide engaging experiences beyond the classroom. And, as your interests change, or expand into new areas, advisors will work with you to adjust your plan of study to accommodate your evolving goals.

RIT's Individualized Studies Major is All About High-Touch, Hands-On Advising

When you enroll in RIT's bachelor's of individualized studies, we want to get to know you and your interests, your career goals, and what you want out of your education. This will allow us to help you craft an educational journey that's personalized to your goals. Our advising process is continual, high-touch, and customized to meet your specific needs. We'll help you:

- Design an individualized studies major comprised of hand-picked courses from RIT's dynamic academic portfolio
- Arrange introductions with RIT's faculty, staff, and alumni, Rochester community partners, and beyond
- Mentor you on your academic path
- Connect you to university resources
- Support you through program completion

Furthering Your Education: An Individualized Study Major Opens Doors

RIT/Syracuse University College of Law 3+3 Option: RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly qualified students, providing a fast-track pathway to law school where you can earn a bachelor's degree and a Juris Doctorate in six years. Successful applicants may be offered admission into the individualized study major and given conditional acceptance into Syracuse University College of Law. Learn more about the RIT/Syracuse University College of Law 3+3 Option.

Combined Accelerated Bachelor's/Master's Degrees: RIT offers Combined Accelerated Bachelor's/Master's Degrees that enable you to earn both a bachelor's and a master's degree in as little as five years, giving you a competitive advantage.

- +1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the bachelor's of individualized studies as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway adds a competitive advantage to your studies.
- +1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Students in the BS in individualized studies degree are strongly encouraged to participate in cooperative education and internships. These hands-on, career-focused experiences can help you make connections between your course work and industry, and help you gain valuable experience that prepares you for success after you graduate.

Curriculum

Applied Arts and Science, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
SOIS-101	Individualized Study Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education - Artistic Perspective	3
	General Education - First Year Writing (WI)	3
	General Education - Mathematical Perspective A	3
	Professional Concentration Courses	15
	General Education - Electives	6
Second Year		
SOIS-201	Paradigms & Worldviews (General Education)	3
SOIS-202	Individuals & Society (General Education)	3
	Professional Concentration Courses	12
	General Education - Ethical Perspective	3
	General Education - Natural Science Inquiry Perspective	3
	General Education - Mathematical Perspective B	3
	General Education - Scientific Principles Perspective	3
Third Year		
	General Education - Global Perspective	3
	Professional Concentration Courses	18
	General Education - Immersion 1, 2	6
	Open Elective	3
Fourth Year		
SOIS-510	Multidisciplinary Life (WI-PR)	3
	General Education - Immersion 3	3
	Professional Concentration Courses	5
	General Education - Electives	9
	General Education- Elective (WI-GE)	3
	Open Electives	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

First-Year Admissions

This degree offers students the opportunity to create individualized undergraduate programs. Applicants should speak directly to a first-year admissions counselor in the Office of Undergraduate Admissions for more information.

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admissions

This program offers students the opportunity to create individualized undergraduate programs of technical and professional study through its applied arts and science program. The applied arts and science program is particularly appropriate for individuals who have prior college-level learning, are interested in changing majors, have unique ideas about how they want to design their academic areas of study, or want to prepare themselves for a career that requires skills and expertise from several disciplines. Applicants should speak directly to a transfer admissions counselor in the Office of Undergraduate Admissions for more information.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Organizational Change and Leadership, Certificate

www.rit.edu/study/organizational-change-and-leadership-certificate
School of Individualized Study Advising Team
585-475-2234, sois@rit.edu

Program overview

Profound and ongoing changes are taking place in organizations, and individuals need to be flexible and proactive in their response. The organizational change and leadership certificate helps students understand corporate culture and develop skills necessary to manage organizational and individual change. Through the study of leadership, corporate culture, change management, organizational behavior, and team dynamics, individuals understand and obtain the skills necessary to proactively manage workplace change.

Curriculum

Organizational Change and Leadership, certificate, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
SOIS-205	Practicing and Assessing Leadership	3
SOIS-233	Teams and Team Development	3
SOIS-335	Global Forces and Trends	3
SOIS-431	Understanding Organizational Culture	3
Second Year		
SOIS-432	Managing Organizational Change	3
SOIS-442	Learning Organization	3
Total Semester Credit Hours		**18**

Faculty

Individualized Education

James Hall, BA, MA, Wilfrid Laurier University (Canada); MTS, Waterloo Lutheran Seminary (Canada); MA, Ph.D., University of Iowa—Dean, University Studies Division and Executive Director, SOIS; Professor

Stephen Aldersley, BS, University of Surrey (United Kingdom); MS, University of Lancaster (United Kingdom); Graduate Education Certificate, St. Martin's (United Kingdom); MS, College of St. Rose; Ed.D., University of Rochester—Professor

Makini Beck, BA, State University College at Old Westbury; M.S.Ed., St. Bonaventure University; Ph.D., University of Rochester—Assistant Professor

Peter Boyd, BA, Nazareth College; MA, Columbia University—Senior Lecturer and Graduate Program Coordinator

Leonie Fernandes, BS, University of Michigan; MS, Rochester Institute of Technology; PMI—Project Management Coordinator; Senior Lecturer

Joel Gallegos Greenwich, BA, Ouachita Baptist University; MA, Fuller Seminary; MS, University of Rochester; Ph.D., University of Rochester—Professor of Practice

Thomas Hanney, Certificate, Rochester Institute of Technology; BA, St. John Fisher College; MPA, State University College at Brockport—Principal Lecturer

Clarence Sheffield, BS, University of Utah; MA, University of Colorado at Boulder; Ph.D., Bryn Mawr College—Professor

David P. Wick, BS, ME, MS, Ph.D., Clarkson University—Associate Professor

University Writing Program

Pamela Kincheloe, BA, Rollins College; MA, University of North Carolina at Chapel Hill; Ph.D., Southern Illinois University—Professor and University Writing Program Director

Ruth Book, BA, Pepperdine University; MA, Ph.D., University of Connecticut—Lecturer

Luke Daly, BA, State University College at Fredonia; MFA, Minnesota State University at Mankato—Senior Lecturer

Emma Duncan, BA, Gordon College; MA, University of Rochester—Lecturer

Matthew Houdek, BS, University of Wisconsin-Stout; MA, Syracuse University; Ph.D., University of Iowa—Senior Lecturer

Andrew Perry, BA, State University College at Oswego; MA, State University College at Brockport—Senior Lecturer

Phil Shaw, BA, MA, University of Denver—Senior Lecturer

Thomas Stone, BA, Northern Arizona University; MA, Bucknell University; Ph.D., University of Rochester—Lecturer

David Yockel, BA, State University College at Fredonia; MA, State University College Brockport—Senior Lecturer

Reserve Officer's Training Corp—ARMY

LTC Jacob Jendrey, BA, Old Dominion University; MA, Webster University—Professor

CPT Douglas Munroe, BS, Norwich University—Assistant Professor

CPT Samuel Lombardo, BA, Waynesburg University; MA, Webster University—Assistant Professor

Reserve Officer's Training Corp—AIR FORCE

Capt Matthew Carpenter, MS, American Public University

Lt Col Christopher Denzer, BS, University of Maryland; MS, North Carolina State University—Professor

1st Capt. Alexander Stoenner, BS, Grantham University—Assistant Professor

RIT Honors Program

Carl Lutzer, BS, Michigan State University; MA, Ph.D., University of Kentucky—Director, Honors Program; Professor

College of Liberal Arts

Kelly Norris Martin, Interim Dean
rit.edu/liberalarts

Programs of Study

Combined Accelerated Bachelor's/Master's Degree available

The College of Liberal Arts plays three important roles at RIT: it offers a variety of undergraduate and graduate degree programs in the social sciences and humanities; it provides general education courses required of all students pursuing baccalaureate and associate degrees; and it creates opportunities for students and the RIT community to participate in cultural and academic experiences such as theater, music, creative writing, public speaking, and lectures.

Recognizing that future leaders will work in an increasingly interconnected and complex world, the College of Liberal Arts provides students with a rigorous curriculum in the liberal arts. This curriculum is designed to help them forge comprehensive links between a major field of study and the ethical, social, cultural, and communicative demands of the contemporary world. As a result, the general education requirements for undergraduate students include introductory and upper-level courses in the humanities and the social and behavioral sciences.

Please visit the college's website–**rit.edu/liberalarts**–for in depth information on academics, faculty, facilities, research initiatives, advising services, and more.

Admission requirements

For more information on undergraduate admission, including freshman and transfer admission guidelines, please refer to individual program descriptions and the Undergraduate Admission section of this bulletin.

Financial aid and scholarships

Please refer to the Financial Aid and Scholarships section of this bulletin for information regarding financial aid, scholarships, loans, and grants.

Advertising and Public Relations, BS

www.rit.edu/study/advertising-and-public-relations-bs
Lisa Monette,
585-475-4137, lxmgla@rit.edu

Program overview

Smartphones, smart tech, data capturing, social media, and the ever-evolving internet landscape have changed every facet of how an audience can be reached and influenced. Connecting the right message, the right timing, and the right communication channel has never been more complex or more data-informed. For the advertising and public relations leaders of the future, being highly skilled in both the theories of persuasive communication and the tools to support it will be critical to success.

Advertising and Public Relations at RIT: Human-Centered, Tech-Infused

To prepare grads for successful careers in both advertising and public relations, RIT's program builds a broad range of essential skills to:

- Use data and technology to inform advertising strategy and track performance toward goals.
- Apply research methods and data analysis to identify and understand the needs of target audiences.
- Make data-informed decisions to select the right media platforms for reaching the right target audiences.
- Create and deliver messaging that persuades and compels action.
- Plan and manage campaigns to support advertising and public relations goals.

A core of required communication courses sets a foundation with courses in communication theory, visual communication, public relations, advertising, writing, campaign planning and management, media planning, public speaking, and digital design.

A professional core of marketing courses provides a deeper understanding and appreciation of marketing, while electives and liberal arts courses complete the curriculum.

Senior Thesis: Students conduct original research on a subject of their choosing. Two faculty members serve as advisors and guide each student on how to investigate a topic, select a research method, implement the project, and present their findings. Students often present their research at conferences.

Advising: Every student in the School of Communication is assigned a professional academic advisor and a faculty mentor. Professional advisors assist with course planning and registration. Faculty mentors provide advising on career development and planning, including information about research opportunities, graduate school, and jobs. Peer mentors, who are upper-level advertising and public relations students, are also available to answer questions about classes, clubs on campus, student-run activities, and other matters from the student's perspective. For more information, please refer to the college's academic advising page.

Double Majors, Minors, and Immersions for Your Career Goals

Adding a second area of study as a double major, a minor, or immersion can round out your skill set, give you an edge in the job market, and ensure that your education supports your career goals. RIT offers more than 127 minors, 75 immersions, 79 majors, and nearly endless possibilities for combining them so you can customize your path to success in any industry niche. See a complete list of RIT's minor and immersion options.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly qualified students. This option provides a fast-track pathway to law school where you can earn a bachelor's degree and a Juris Doctorate in six years. You may apply to the 3+3 option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's advertising and public relations degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in advertising and public relations as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Students in the advertising degree are required to complete one cooperative education experience.

Curriculum

Advertising and Public Relations, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
COMM-105	Foundations of Communication	3
COMM-201	Public Speaking (General Education)	3
COMM-211	Principles of Advertising	3
COMM-212	Public Relations	3
MATH-101	College Algebra (General Education - Mathematical Perspective A)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – (Artistic Perspective)	3
	General Education – (Ethical Perspective)	3
	General Education – (First-Year Writing (WI))	3
	General Education – (Natural Science Inquiry Perspective)	3
	General Education – (Elective)	3
Second Year		
COMM-202	Mass Communications (General Education)	3
COMM-221	Public Relations Writing (WI-GE, WI-PR)	3
COMM-223	Digital Design in Communication	3
COMM-304	Intercultural Communication	3
STAT-145	Introduction to Statistics I (General Education - Mathematical Perspective B)	3
	General Education – (Global Perspective)	3
	General Education – (Social Perspective)	3
	General Education – (Scientific Principles Perspective)	3
	General Education – (Elective)	3
	Open Elective	3
Third Year		
COMM-301	Theories of Communication	3
COMM-321	Copywriting and Visualization	3
COMM-322	Campaign Management and Planning	
COMM-401	Quantitative Research Methods	3
COMM-499	Communication Co-op (summer)	0
MKTG-230	Principles of Marketing	3
	General Education – Immersion 1, 2, 3	9
	General Education – Electives	6
Fourth Year		
COMM-402	Qualitative Research Methods	3
COMM-421	Media Planning	
COMM-497	Communication Portfolio	0
COMM-501	Senior Thesis in Communication (WI-PR)	3
	Professional Core Courses	6
	General Education – Electives	6
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Professional Core Courses

Students choose two of the following:

MKTG-320	Digital Marketing
MKTG-330	Global Marketing
MKTG-350	Consumer Behavior
MKTG-360	Professional Selling
MKTG-370	Advertising and Promotion Management
MKTG-430	Social Media Marketing
MKTG-489	Seminar in Marketing

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Advertising and Public Relations, BS degree/ Communication, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
COMM-105	Foundations of Communication	3
COMM-201	Public Speaking	3
COMM-211	Principles of Advertising	3
COMM-212	Public Relations	3
YOPS-10	RIT 365: RIT Connections	0
	General Education - First Year Writing (WI)	3
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Natural Science Inquiry Perspective‡	3
MATH-101	College Algebra (General Education - Mathematical Perspective A)	3
	General Education - Elective	3
Second Year		
COMM-202	Mass Communications	3
COMM-221	Public Relations Writing (WI-GE, WI-PR)	3
COMM-223	Digital Design in Communication	3
	General Education - Global Perspective	3
	General Education - Social Perspective	3
	General Education - Scientific Principles Perspective	3
STAT-145	Introduction to Statistics I (General Education - Mathematical Perspective B)	3
	General Education - Elective	3
	Open Electives	6
Third Year		
COMM-301	Theories of Communication	3
COMM-321	Copywriting and Visualization	3
COMM-401	Quantitative Research Methods	3
COMM-421	Media Planning	3
COMM-499	Communication Co-op (summer)	0
MKTG-230	Principles of Marketing	3
	General Education - Immersion 1, 2, 3	9
	General Education - Electives	6
Fourth Year		
COMM-304	Intercultural Communication	3
COMM-322	Campaign Management and Planning	3
Choose one of the following:		3
COMM-402	Qualitative Research Methods	
COMM-489	Advertising and Public Relations Agency I	
COMM-497	Communication Portfolio	0
COMM-501	Senior Thesis in Communication (WI-PR)	3
COMM-714	Strategic Communication	3
	General Education - Electives	6
	Open Electives	6
	Graduate Communication Elective	3
Fifth Year		
COMM-702	Communication Theories	3
COMM-703	Research Methods in Communication	3
COMM-720	Thesis Preparation Seminar	0
Choose one of the following:		6
COMM-800	Communication Thesis/Project	
COMM-801	Comprehensive Exam*	
	Professional Core	9
	Graduate Communication Elective	3
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, student must take both the lecture and lab portions to satisfy the requirement.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in advertising, marketing, communications, liberal arts, and science

Appropriate associate degree programs for transfer

Advertising, business/marketing, communications, public relations, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Applied Modern Language and Culture, BS

www.rit.edu/study/applied-modern-language-and-culture-bs

Lisa Monette,
585-475-4137, lxmgla@rit.edu

Program overview

Today's workforce is increasingly global, and career opportunities may arise in exciting international locations where a solid understanding of your career field includes proficiency in a second language and its culture. The language degree in applied modern language and culture is a distinctive, dynamic foreign language degree in which you'll study Chinese, French, Japanese, or Spanish. It prepares you to actively apply your knowledge of language and culture to a technical or professional discipline of your choice, such as science, business, communication, computing and information technology, engineering, the arts, and more. You'll gain proficiency in your chosen language while learning to articulate your technical or professional discipline in that language.

Applied modern language and culture is not a traditional foreign language degree. Instead, the major provides advanced study of languages and cultures that most directly apply to the global workplace and the global economy in which you'll work. You will choose a language option—Chinese, French, Japanese, or Spanish—where you'll immerse yourself in that region's language and culture. In addition, choose a secondary major of study or a minor in a technical or professional discipline, such as computing, information technology, engineering, business, the arts, or the sciences.

This foreign language major is unique in that it provides extensive study of a specific language and culture and its direct application to a career field. You will learn how the integration of language skills, cultural awareness, and professional fluency impacts their work in science, computing, communication, engineering, business, the arts, and more.

In the final year, engage in an interdisciplinary capstone seminar that integrates your chosen linguistic/cultural discipline with the professional or technical field you chose to pursue. This capstone seminar culminates in a senior project presentation.

Options

Choose a language—Chinese, French, Japanese, or Spanish—where you'll immerse yourself in that region's language and culture. Learn to speak, understand, read, and write in your chosen language and gain proficiency in the culture and traditions surrounding the language and geographic region.

Chinese: In the Chinese option you will experience the Chinese language and culture, as well as develop your fluency in the language while learning how to apply this skill to your technical or professional discipline.

French: In the French option you will gain an advanced understanding of the language and the culture. Coupled with your secondary degree you will be prepared for a career in our globally connected world.

Japanese: In the Japanese option you'll learn the Japanese language and culture, and develop your fluency in the language while learning how to apply this skill to your technical or professional discipline.

Spanish: In the Spanish option you will gain an advanced understanding of the language and the culture. Coupled with your secondary degree you will be prepared for a career in our globally connected world.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

The applied modern language and culture major includes a required international experience where students live, study, or work in an international location. Through study abroad or an international co-op, students immerse themselves in their chosen language, engage in cultural customs and traditions, and broaden their global perspective and understanding.

Curriculum

Applied Modern Language and Culture (Chinese track), BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
MLCH-201	Beginning Chinese I	
	General Education – Global Perspective	
Choose one of the following:		3
MLCH-202	Beginning Chinese II	
	General Education – Global Perspective	
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Electives	6
Second Year		
MLCH-301	Intermediate Chinese I	3
MLCH-302	Intermediate Chinese II	3
MLCH-310	Intermediate Conversational Chinese	3
MLCH-315	Intermediate Reading and Writing in Chinese	3
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – Immersion 1, 2	6
	MLC Focus Area Courses	6
Third Year†		
MLCH-410	Chinese for Science and Technology	3
	Advanced Chinese Language Courses	6
	General Education – Immersion 3	3
	General Education – Electives	9
	MLC Focus Area Course	3
	MLC Program Elective	3
	Open Elective	3
Fourth Year		
MLCH-415	Professional Chinese	3
MLCU-549	Capstone Seminar in Applied Modern Language and Culture	3
	General Education – Electives	6
	MLC Focus Area Courses	6
	Open Electives	12
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE)for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students complete Study Abroad and Work Abroad requirements in the third year of study. Prior to studying abroad, MLCH-201, MLCH-202, MLCH-301, MLCH-302, and two Intermediate Enhancement Courses.

Applied Modern Language and Culture (French track), BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
MLFR-201	Beginning French I	
	General Education – Global Perspective	
Choose one of the following:		3
MLFR-202	Beginning French II	
	General Education – Global Perspective	
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Electives	6
Second Year		
MLFR-301	Intermediate French I	3
MLFR-302	Intermediate French II	3
MLFR-310	French Oral Communication	3
MLFR-315	French Reading and Writing Proficiency	3
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – Immersion 1, 2	6
	MLC Focus Area Courses	6
Third Year†		
MLFR-410	French for Science and Technology	3
	Advanced French Language Courses	6
	General Education – Immersion 3	3
	General Education – Electives	9
	MLC Focus Area Course	3
	MLC Program Elective	3
	Open Elective	3
Fourth Year		
MLFR-415	Professional French	3
MLCU-549	Capstone Seminar in Applied Modern Language and Culture (WI-PR)	3
	General Education – Electives	6
	MLC Focus Area Courses	6
	Open Electives	12
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students complete Study Abroad and Work Abroad requirements in the third year of study. Prior to studying abroad, MLFR-201, MLFR-202, MLFR-301, MLFR-302, and two Intermediate Enhancement Courses.

Applied Modern Language and Culture (Japanese track), BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
MLJP-201	Beginning Japanese I	
	General Education – Global Perspective	
Choose one of the following:		3
MLJP-202	Beginning Japanese II	
	General Education – Global Perspective	
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Electives	6
Second Year		
MLJP-301	Intermediate Japanese I	3
MLJP-302	Intermediate Japanese II	3
MLJP-310	Practical Reading and Speaking in Japanese	3
MLJP-315	Practical Writing and Speaking in Japanese	3
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – Immersion 1, 2	6
	MLC Focus Area Courses	6
Third Year†		
MLJP-410	Japanese for Science and Technology	3
	Advanced Japanese Language Courses	6
	General Education – Immersion 3	3
	General Education – Electives	9
	MLC Focus Area Course	3
	MLC Program Elective	3
	Open Elective	3
Fourth Year		
MLJP-415	Professional Japanese	3
MLCU-549	Capstone Seminar in Applied Modern Language and Culture	3
	General Education – Electives	6
	MLC Focus Area Courses	6
	Open Electives	12
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students complete Study Abroad and Work Abroad requirements in the third year of study. Prior to studying abroad, MLJP-201, MLJP-202, MLJP-301, MLJP-302, and two Intermediate Enhancement Courses.

Applied Modern Language and Culture (Spanish track), BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
MLSP-201A	Beginning Spanish IA	
	General Education – Global Perspective	
Choose one of the following:		3
MLSP-202	Beginning Spanish II	
	General Education – Global Perspective	
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Electives	6
Second Year		
MLSP-301	Intermediate Spanish I	3
MLSP-302	Intermediate Spanish II	3
MLSP-310	Spanish Grammar Review	3
MLSP-315	Hispanic Culture & Civilization	3
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – Immersion 1, 2	6
	MLC Focus Area Courses	6
Third Year†		
MLSP-410	Spanish for Science and Technology	3
	Advanced Spanish Language Courses	6
	General Education – Electives	9
	General Education – Immersion 3	3
	MLC Focus Area Course	3
	MLC Program Elective	3
	Open Elective	3
Fourth Year		
MLSP-415	Professional Spanish	3
MLCU-549	Capstone Seminar in Applied Modern Language and Culture	3
	General Education – Electives	6
	MLC Focus Area Courses	6
	Open Electives	12
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students complete Study Abroad and Work Abroad requirements in the third year of study. Prior to studying abroad, MLSP-201, MLSP-202, MLSP-301, MLSP-302, and two Intermediate Enhancement Courses.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, science, and foreign language

Appropriate associate degree programs for transfer

Liberal arts with social sciences, sciences, or languages

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Communication, BS

www.rit.edu/study/communication-bs
Lisa Monette,
585-475-4137, lxmgla@rit.edu

Program overview

Developing productive relationships, managing teams, analyzing audiences, creating effective messages, and understanding media are key competencies needed for successful communication professionals. RIT's communications degree prepares you in the theory, research, and practical application needed to develop these skills. You will graduate ready for a successful career as a communication specialist. The degree's strong focus on undergraduate research also prepares you for graduate work in communication and related academic disciplines.

RIT's Communication Bachelor Degree

Customize your bachelor of communication by taking professional core courses from RIT's nine colleges, in areas as diverse as design, photography, marketing, health care, programming, and engineering, to name a few. This unique combination of course work allows you to explore the breadth of the communication field while studying other subject areas of professional or personal interest. You will be prepared for a variety of careers, ranging from traditional corporate communication to entrepreneurial start-up environments.

Take courses in communication theory, visual communication, public speaking, mass communication, communication law and ethics, technology-mediated communication, and research methods. Complete a professional core from one of the many minors across the university or you may design your own. Electives and liberal arts courses complete the curriculum. Complement your classroom work by completing one semester of cooperative education that deepens your knowledge of the communication field while you gain hands-on work experience that prepares you for a full-time position after graduation.

Every student in the School of Communication is assigned a professional academic advisor and a faculty mentor. Professional advisors assist with course planning and registration. The faculty mentor provides advising on career development and planning, including information about research opportunities, graduate school, and jobs. Peer mentors, who are upper-level advertising and public relations students, are also available to answer questions about classes, clubs on campus, student-run activities, and other matters from the student's perspective. For more information, please refer to the college's academic advising page.

Communication Master's Degree

The School of Communication offers an MS degree in communication.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly capable students. This option provides a fast-track pathway to law school in which students earn a bachelor's degree and a Juris Doctorate degree in six years. In the 3+3 option, students may apply to the option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's communication degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more. Learn more about our accelerated bachelor's/master's degrees and how you can prepare for your future faster.

+1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in communication as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Students in the communication degree are required to complete one cooperative education experience.

Curriculum

Communication, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
COMM-101	Human Communication (General Education)	3
COMM-105	Foundations of Communication	3
COMM-201	Public Speaking (General Education)	3
COMM-202	Mass Communications	3
MATH-101	College Algebra (General Education – Mathematical Perspective A)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Global Perspective	3
	General Education – Elective	3
Second Year		
COMM-341	Visual Communication	3
COMM-342	Communication Law and Ethics	3
Choose one of the following:		3
COMM-302	Interpersonal Communication	
COMM-303	Small Group Communication	
COMM-304	Intercultural Communication	
COMM-343	Technology-Mediated Communication	3
STAT-145	General Education – Mathematical Perspective B: Introduction to Statistics I	3
	General Education – Immersion 1	3
	General Education – Scientific Principles Perspective	3
	General Education – Social Perspective	3
	Open Elective	3
	Professional Core‡	3
Third Year		
COMM-301	Theories of Communication	3
COMM-401	Quantitative Research Methods	3
COMM-499	Communication Co-op (summer)	0
	General Education – Natural Science Inquiry Perspective§	3
	General Education – Immersion 2, 3	6
	Communication Elective	3
	Open Electives	6
	Professional Core‡	6
Fourth Year		
COMM-402	Qualitative Research Methods	3
COMM-497	Communication Portfolio	0
COMM-501	Senior Thesis in Communication (WI-PR)	3
	Communication Elective	3
	Professional Core‡	3
	General Education – Electives	15
	Open Elective	3
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Professional core may be fulfilled by selecting a 300-level (or higher) course from a discipline outside the liberal arts.
§ Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, the student must take both the lecture and lab portions to satisfy the requirement.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Communication, BS degree/Communication, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
COMM-101	Human Communication	3
COMM-105	Foundations of Communication	3
COMM-201	Public Speaking	3
COMM-202	Mass Communications	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
MATH-101	College Algebra (General Education – Mathematical Perspective A)	3
	General Education – Elective	3
Second Year		
Choose one of the following:		3
COMM-302	Interpersonal Communication	
COMM-303	Small Group Communication	
COMM-304	Intercultural Communication	
COMM-341	Visual Communication	3
COMM-342	Communication Law and Ethics	3
COMM-343	Technology-Mediated Communication	3
	Professional Core	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	General Education – Immersion 1	3
	Open Elective	3
Third Year		
COMM-301	Theories of Communication	3
COMM-401	Quantitative Research Methods	3
COMM-499	Communication Co-Op	0
	Professional Core	6
	General Education – Natural Science Inquiry Perspective‡v	3
	General Education – Immersion 2, 3	6
	General Education – Elective	3
	Open Electives	6
Fourth Year		
COMM-402	Qualitative Research Methods	3
COMM-497	Communication Portfolio	0
COMM-501	Senior Thesis in Communication (WI-PR)	3
COMM-714	Strategic Communication	3
	Graduate Communication Elective	3
	Professional Core	3
	General Education – Electives	12
	Open Elective	3
Fifth Year		
COMM-702	Communication Theories	3
COMM-703	Research Methods in Communication	3
COMM-720	Thesis Preparation Seminar	0
Choose one of the following:		6
COMM-800	Communication Thesis/Project	
COMM-801	Comprehensive Exam plus two Graduate Electives**	
	Graduate Communication Elective	3
	Professional Core	9
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
** These can be from the Graduate Professional Core or a Graduate Communication Elective, or a combination of both.
‡ Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, student must take both the lecture and lab portions to satisfy the requirement.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, math, science, and computer science

Appropriate associate degree programs for transfer

Liberal arts with emphasis in communication and a technical field such as business, photography, or computer science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Criminal Justice, BS

www.rit.edu/study/criminal-justice-bs
Lisa Monette,
585-475-4137, lxmgla@rit.edu

Program overview

Majoring in criminal justice provides you with a broad education that speaks to your interest in law and justice. You will be prepared for a wide range of careers in federal and local criminal justice agencies. The major also provides continuing education for professionals already employed in criminal justice positions and offers a strong academic foundation for graduate or law school. The criminal justice BS is unique in its broad core curriculum, the scope of professional course offerings, an intensive field experience where students blend knowledge gained in the classroom with a career-oriented internship, and opportunities for cooperative education.

RIT's Criminal Justice BS

Develop your understanding of crime and the criminal justice system responses. You will explore contemporary public safety issues, especially those involving technology, and evaluate the intended and unintended consequences. This framework offers opportunities to consider policy responses and engage in hands-on research in local agencies. A focus on theory and social science provides you with the problem-solving skills necessary for addressing today's most pressing social issues.

RIT's approach to the study of criminal justice combines theoretical perspectives with practical experience. The emphasis within the areas of crime, criminal behavior, social control mechanisms, administration, planning, and management is on problem-solving techniques based on the growing body of research in the field as well as students' own guided research.

Advising

Students are assigned a faculty advisor who assists in formulating career goals and planning a field of study to achieve professional aspirations. Through core courses, students are exposed to the widest possible range of perspectives from which to view crime and the nature of criminal justice administration, thus broadening their career options.

Center for Public Safety Initiatives

The Center for Public Safety Initiatives is housed in the criminal justice department and works with the Rochester Police Department and other community groups. Several students work at CPSI and gain valuable experience working with crime mapping, data gathering, and data analysis. Students work closely with faculty on various projects, including Operation IMPACT, Ceasefire and Project Safe Neighborhoods, and the Rochester Police Department. The CPSI supports the development, implementation, and evaluation of criminal justice and community-based anti-crime and anti-violence interventions.

Careers in Criminal Justice

Many graduates are engaged in law enforcement careers in agencies at all levels of government, including the Federal Bureau of Investigation, Secret Service, U.S. Marshals Service, Naval Intelligence Service, U.S. Customs and Border Patrol, Immigration and Naturalization Service, Centers for Disease Control, Department of the Interior, and the National Park Service, among others. The Rochester Police Department, Monroe County Sheriff's Department, and suburban departments

throughout the greater Rochester area employ our graduates. A number have advanced in rank to positions of command, including several chiefs and deputy chiefs.

Other alumni work as correctional officers, counselors, probation officers, and parole officers; with many advancing to administrative positions. A significant number of alumni have used the program as a foundation for law school and have entered the legal profession as prosecutors, public defenders, and private practice lawyers. Many graduates serve in U.S. Attorneys General offices. Others serve the legal profession as investigators or paralegals.

Consistent with the liberal arts/social science nature of the major, some graduates have attained advanced degrees in related areas and entered teaching careers at the secondary and college levels. Others have become psychologists, social workers, drug and alcoholism counselors, youth service specialists, and victim assistance/rape crisis counselors. Many have completed advanced degrees in business, public policy, public administration, criminology, and criminal justice.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly qualified students. This option provides a fast-track pathway to law school where you can earn a bachelor's degree and a Juris Doctorate in six years. You may apply to the 3+3 option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's criminal justice degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

During your senior year, you have the opportunity to complete an internship at a number of agencies and organizations in the areas of law, law enforcement, institutional and non-institutional corrections, courts, juvenile advocacy and counseling programs, and security. For one semester, you may work 25-hours-a-week under an agency field supervisor and meet regularly with advisors and peers who are doing field placements in other agencies. Internships are individualized to fit a student's career objectives.

Curriculum

Criminal Justice, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CRIM-100	Seminar in Criminal Justice	3
CRIM-110	Introduction to Criminal Justice	3
YOPS-10	RIT 365: RIT Connections	0
	Criminal Justice Elective	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Global Perspective	3
	General Education – Natural Science Inquiry Perspective‡	3
	General Education – Social Perspective	3
	General Education – Elective	3
Second Year		
CRIM-300	Quantitative Methods for Criminal Justice	3
CRIM-350	Theories of Crime and Criminality	3
CRIM-400	Research Methods	3
	Criminal Justice Elective	3
	General Education – Immersion 1, 2	6
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – Scientific Principles Perspective	3
	General Education – Elective	3
Third Year		
	Criminal Justice Electives	9
	General Education – Electives	9
	General Education – Immersion 3	3
	Open Electives	9
Fourth Year		
CRIM-500	Seminar in Criminal Justice and Public Policy (WI-PR)	3
CRIM-550	Field Experience	3
	Criminal Justice Electives	9
	General Education – Electives	9
	Open Electives	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Criminal Justice Electives

COURSE	
CRIM-210	Technology in Criminal Justice
CRIM-215	Law and Society
CRIM-220	Corrections
CRIM-225	Criminal Law
CRIM-230	Juvenile Justice
CRIM-235	Crime, Justice and Communities
CRIM-240	Law Enforcement in Society
CRIM-245	Prostitution and Vice
CRIM-250	Domestic Violence
CRIM-255	Seminar on Sexual Violence
CRIM-260	Courts
CRIM-265	Women and Crime
CRIM-270	Current Issues in Criminal Justice
CRIM-275	Crime and Violence
CRIM-285	Minority Groups and the Criminal Justice System
CRIM-290	Computer Crime
CRIM-299	Crime, Justice, and Ethics
CRIM-310	Seminar in Law
CRIM-315	Evidence
CRIM-489	Major Issues in Criminal Justice

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Criminal Justice, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CRIM-100	Seminar in Criminal Justice	3
CRIM-110	Introduction to Criminal Justice	3
YOPS-010	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry Perspective‡	3
	General Education – First Year Writing (WI)	3
	General Education – Elective	3
	Criminal Justice Elective	3
Second Year		
CRIM-300	Quantitative Methods for Criminal Justice	3
CRIM-350	Theories of Crime and Criminality	3
CRIM-400	Research Methods	3
	Criminal Justice Elective	3
	General Education – Scientific Principles Perspective	3
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – Elective	3
	General Education – Immersion 1, 2	6
Third Year		
	Criminal Justice Electives	9
	General Education – Electives	9
	General Education – Immersion 3	3
	Open Electives	9
Fourth Year		
CRIM-500	Seminar in Criminal Justice and Public Policy (WI-PR)	3
CRIM-550	Field Experience	3
CRIM-700	Pro-Seminar In Criminal Justice Theory	3
CRIM-703	Advanced Criminology	3
	General Education – Electives	9
	Open Electives	6
	Criminal Justice Elective	3
Fifth Year		
CRIM-701	Statistics	3
CRIM-702	Pro-Seminar in Research Methods	3
CRIM-704	Crime, Justice and Community	3
CRIM-705	Interventions and Change in Criminal Justice	3
CRIM-775	Criminal Justice Capstone	3
	Electives	9
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in criminal justice or related areas, liberal arts, math, and science

Appropriate associate degree programs for transfer

Criminal justice, human services, or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Economics, BS

www.rit.edu/study/economics-bs
Lisa Monette,
585-475-4137, lxmgla@rit.edu

Program overview

Economists play a role in a range of industries, from business and law to social sciences, agriculture, and environmental studies. They study how society distributes its resources – from land, labor, raw materials, and machinery – to produce a range of goods and services. They also conduct research, collect and analyze information, monitor economic trends, and develop forecasts to guide industries in making critical decisions. For students who have strong math skills, but are also interested in impacting policy and social issues, an economics bachelor's degree is an exciting, dynamic major.

RIT's Economics Bachelor's Degree

Develop your communication, computational, and management skills in addition to refining your economic reasoning and quantitative abilities. You'll be prepared to apply economic analysis to help solve real-world problems.

The economics degree emphasizes the quantitative analytical approach to dealing with economic problems in both the public and private sectors, providing you with marketable skills and the intellectual foundation for career growth. Graduates are prepared for entry-level managerial and analytical positions in both industry and government and to pursue graduate studies in economics, business, and law. Students choose one of the following tracks: economic theory, environmental economics, or managerial economics.

Economics Courses

The economics curriculum develops communication, computational, and management skills in addition to economic reasoning and quantitative abilities. Required courses develop your abilities to apply economic analysis to real-world problems. Liberal arts courses enhance oral and written communication skills. Business courses include accounting and finance. Quantitative analytical skills are developed by a course sequence that includes computer science, mathematics, and statistics.

Free electives allow you to pursue advanced study in your individual areas of interest and/or develop a double major. Along with finance, marketing, mathematics, statistics, or computer science, there are many other possibilities. Faculty advisors help you develop professional options that assist you in attaining your career goals.

Capstone Experience

Students are required to complete a creative capstone experience. Students may publish a paper in a refereed journal, present a paper at a professional conference or at an RIT-sponsored conference, present research at an approved exhibit at Imagine RIT: Creativity and Innovation Festival, or fulfill a comparable creative capstone requirement in the student's primary major (if economics is the secondary major).

Double Majors

Double majors are a way to customize your education to best reflect your interests, career goals, and your marketability after you graduate. The economics bachelor's degree is flexible and allows students to pursue a double major in a secondary field of study. Even with a double major students are able to graduate in four years.

Academic Enrichment Opportunities

Economics faculty members serve as mentors and are available to enhance students' personal and professional growth. Students may work as teaching assistants for professors in economics courses or learn about research techniques as research assistants for faculty. For both of these activities, students receive a stipend. Finally, students can engage in independent or joint research with a faculty member, receiving academic credit and obtaining funding for their research needs.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly capable students. This option provides a fast-track pathway to law school in which students earn a bachelor's degree and a Juris Doctorate degree in six years. In the 3+3 option, students may apply to the option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's economics degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in economics as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Students in the economics degree are strongly encouraged to participate in cooperative education.

Curriculum

Economics, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ECON-100	Foundational Seminar in Economics	0
ECON-101	Principles of Microeconomics	3
ECON-201	Principles of Macroeconomics	3
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
STAT-145	Introduction to Statistics I (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Natural Science Inquiry Perspective†	3
	General Education – Elective	3
Second Year		
ECON-402	Intermediate Macroeconomic Theory	3
ECON-403	Econometrics I (WI-PR)	3
Choose one of the following:		3
ECON-405	International Trade and Finance	
ECON-406	Global Economic Issues	
	General Education – Global Perspective	3
	General Education – Immersion 1	3
	General Education – Social Perspective	3
	General Education – Elective	3
	Open Elective	3
	Track Courses	6
Third Year		
ECON-401	Intermediate Microeconomic Theory	3
ECON-404	Mathematical Methods: Economics	3
Choose one of the following:		3
ISCH-110	Principles of Computing	
ISTE-105	Web Foundations	
	General Education – Immersion 2, 3	6
	General Education – Scientific Principles Perspective	3
	General Education – Elective	3
	Open Electives	6
	Track Course	3
Fourth Year		
ECON-407	Industrial Organization	3
ECON-510	Economics Capstone Experience	0
	General Education – Electives	12
	Open Electives	6
	Track Courses	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, the student must take both the lecture and lab portions to satisfy the requirement.

Tracks

Economic Theory and Policy

COURSE		
ECON-410	Game Theory with Economic Applications	
	Upper Division Economics Elective	
Choose any combination of four of the following:		
	Upper Division Economics Elective (from approved list)	
	Mathematics Elective (from approved list)	
	Computing Elective (from approved list)	

Environmental Economics

COURSE	
ECON-421	Natural Resource Economics
ECON-422	Benefit-Cost Analysis
ECON-520	Environmental Economics
	Upper Division Economics Elective or Computing Elective or Mathematics Elective (from approved lists)
	Two Environmental Electives (from approved list)

Managerial Economics

COURSE	
ACCT-110	Financial Accounting
ECON-410	Game Theory with Economic Applications
ECON-430	Managerial Economics
Choose one of the following:	
FINC-220	Financial Management
ECON-431	Monetary Analysis and Policy
ECON-433	Financial Economics
Choose one of the following:	
ECON-405	International Trade and Finance
ECON-406	Global Economic Issues
	Upper Division Economics Elective or Computing Elective or Mathematics Elective (from approved lists)

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Economics, BS degree/Sustainable Systems, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ECON-100	Foundational Seminar in Economics	0
ECON-101	Principles of Microeconomics	3
ECON-201	Principles of Macroeconomics	3
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
STAT-145	Introduction to Statistics I (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Natural Science Inquiry Perspective†	3
	General Education – Elective	3
Second Year		
ECON-402	Intermediate Macroeconomic Theory	3
ECON-403	Econometrics I (WI-PR)	3
Choose one of the following:		3
ECON-405	International Trade and Finance	
ECON-406	Global Economic Issues	
	General Education – Global Perspective	3
	General Education – Immersion 1	3
	General Education – Social Perspective	3
	General Education – Elective	3
	Open Elective	3
	Track Courses	6
Third Year		
ECON-401	Intermediate Microeconomic Theory	3
ECON-404	Mathematical Methods: Economics	3
Choose one of the following:		3
ISCH-110	Principles of Computing	
ISTE-105	Web Foundations	
	General Education – Immersion 2, 3	6
	General Education – Scientific Principles Perspective	3
	General Education – Elective	3
	Open Electives	6
	Track Course	3
Fourth Year		
ECON-407	Industrial Organization	3
ECON-510	Economics Capstone Experience	0
Choose one of the following:		3
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose one of the following:		3
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy and Sustainability (or approved substitute)	
	General Education – Electives	12
	Open Electives	6
	Track Courses	3
Fifth Year		
Choose two of the following:		6
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose two of the following:		6
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy and Sustainability (or approved substitute)	
Choose one of the following:		6
ISUS-780	Capstone	
ISUS-790	Thesis	
	Approved Sustainability Electives	6
Total Semester Credit Hours		**144**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, the student must take both the lecture and lab portions to satisfy the requirement.

Economics, BS degree/Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ECON-100	Foundational Seminar in Economics	0
ECON-101	Principles of Microeconomics	3
ECON-201	Principles of Macroeconomics	3
MATH-171	Calculus A (General Education – Mathematical Perspective A)	3
MATH-172	Calculus B (General Education – Mathematical Perspective B)	3
STAT-145	Introduction to Statistics I (General Education – Elective)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Natural Science Inquiry Perspective†	3
	General Education – Elective	3
Second Year		
ECON-402	Intermediate Macroeconomic Theory	3
ECON-403	Econometrics I (WI-PR)	3
Choose one of the following:		3
ECON-405	International Trade and Finance	
ECON-406	Global Economic Issues	
	General Education – Global Perspective	3
	General Education – Immersion 1	3
	General Education – Social Perspective	3
	General Education – Elective	3
	Open Elective	3
	Track Courses	6
Third Year		
ECON-401	Intermediate Microeconomic Theory	3
ECON-404	Mathematical Methods: Economics	3
Choose one of the following:		3
ISCH-110	Principles of Computing	
ISTE-105	Web Foundations	
	General Education – Immersion 2, 3	6
	General Education – Scientific Principles Perspective	3
	General Education – Elective	3
	Open Electives	6
	Track Course	3
Fourth Year		
ECON-407	Industrial Organization	3
ECON-510	Economics Capstone Experience	0
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
	General Education – Electives	12
	Open Electives	6
	Track Course	3
Fifth Year		
PUBL-700	Readings in Public Policy	3
PUBL-703	Program Evaluation and Research Design	3
Choose one of the following:		3
STSO-710	Graduate Science and Technology Policy Seminar	
PUBL-610	Technological Innovation and Public Policy	
	Graduate Electives	9
Choose one of the following:		6
PUBL-785	Capstone Research	
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam plus 2 Graduate Electives	
Total Semester Credit Hours		**144**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, the student must take both the lecture and lab portions to satisfy the requirement.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in business, liberal arts, math, science, and computer science

Appropriate associate degree programs for transfer

AS degree in business administration or liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance..

English, BS

www.rit.edu/study/english-bs
Robert Glick, Associate Professor
585-475-4618, rdggla@rit.edu

Program overview

Are you interested in a 21st-century English degree?

Technology affects how we write, tell stories, and analyze literature. And there's no better place to explore the fusion of technology and English than at RIT. Our English bachelor's degree grounds you in critical thinking, writing, and making, all while preparing you with digital tools as well as the soft and hard skills that impress employers. With concentrations in creative writing, linguistics, or literature and media, the English major offers more than 70 courses for you to choose from. In addition to traditional literature, you'll study what interests you.

Our faculty offer exploration in fantasy worlds, Twitter bots, social justice, Afrofuturism, transgender poetics, graphic novels, Twine interactive game fictions, speech technologies, the rhetoric of science and terror, digital poems, and dangerous texts. You'll gain expertise in articulating your innovative ideas, building collaborative teams, managing projects, creating powerful messaging that gets results, providing critiques and feedback, making intelligent and ethical arguments and decisions, and speaking in ways that make you stand out.

Preparing You for Today's Dynamic Careers

Today's emerging careers require English language expertise, writing, and analytic skills paired with computer science, new media, linguistics, animation, and more. Today's writers are also content creators who use digital tools to communicate a range of messages across a variety of platforms and collaborate with game designers, animators, scientists, engineers, and digital media strategists.

In the English bachelor's degree, we introduce you to digital tools which interface with the study of language, literature, and media. Additionally, your English degree includes professional electives in any area you choose, which empowers you to customize your English degree around your career goals. You'll have access to a range of computing and tech courses and the world-renowned faculty who teach them.

Are you interested in writing for video games? Your professional courses can come from RIT's major in game design and development.

Do you have a passion for science? Choose professional electives from our majors in biology, biomedical sciences, physics, and more.

In RIT's English degree, you will learn:

- Writing–Gain a complete command of the English language, including grammar, rhetoric, and argument. This gives you an edge in all types of writing, from effective presentations to video game text, and everything in between.
- Storytelling–Learn to tell smart, moving stories about yourself, your organization, your clients, or the products you're tasked with selling.
- Digital Creation and Literacy—Become an expert in creating, reading, and interpreting digital content, developing skills that combine writing and tech, using digital tools for textural analysis, and more.
- Close Reading, Critical Analysis, Interpretation–Articulate deep knowledge and understanding of all kinds of media, concepts, and theories, as you interpret difficult concepts, analyze and defend positions, and provide and accept constructive criticism.
- Communication–Gain expertise in nuance and subtext, and the different modes of writing and speaking in traditional and digital formats. You'll also understand how to assess different audiences in order to strike the proper tone and articulate ideas in clear yet sophisticated ways.
- Cultural Literacy–Learn about the power of language and its role in creating cultural meaning. You'll learn how different social and cultural contexts affect language and meaning, and learn about different cultures through their media traditions, from major literary works and genres to critical traditions.
- Research–Master a variety of research methods, including digital tools and data methodologies, specific to English majors, as well as presentation techniques.
- Organization–Attain the skills needed to work independently and in teams, manage projects, set schedules, meet and manage deadlines, organize projects, execute planning and research, lead and participate in discussions, and present ideas and information.

Concentrations

RIT's English BS offers three concentrations that provide you with an opportunity to tailor your degree around your interest and career aspirations.

Creative Writing–At RIT, creative writing is more than writing poetry, fiction, and non-fiction. We analyze, write, and revise the traditional and innovative writing that inspires you. With a concentration in Creative Writing, you'll learn how to analyze and write in multiple genres and forms, including worldbuilding, digital creative writing, and playwriting. You'll roll dice to create characters and build your own scent bags to enhance your perceptual capabilities. With our organizational affiliations to RIT Storytellers, Mental Graffiti, Signatures Arts and Literary Magazine, and the digital literature journal gl-ph, you can gain valuable professional experience at the same time that you expand and refine your writing horizons.

Linguistics–Linguistics is the scientific study of language and how it's shaped by social factors, how the human brain processes language, how languages developed over time and human evolution, and more. In RIT's English department, our faculty are experts in computational linguistics, a cutting-edge and highly paid field at the intersection of language, linguistics, and computing.

Literature and Media–Literature involves reading and analyzing meaningful works of writing to dissect and understand their historical, cultural and literary significance. In this concentration, you'll examine a range of works, both classical and contemporary, to expand your critical thinking, analytical, and interpretive knowledge of writing and text. While you'll study Shakespeare, Austen, and Morrison, you'll also dive into everything from graphic novels to banned books, from anime to the works of rapper and Pulitzer Prize winner Kendrick Lamar. Add to that hands-on experience with the digital tools that English majors need, and you'll be able to pursue your specific interests at the same time you're setting yourself up for professional life.

English as a Double Major

Are you interested in pairing an English degree with your interests in programming, computing, law, foreign language, business, or the arts? With its focus on writing, critical thinking, and communication, an English degree deepens your expertise in both areas and broadens your skill set for a career in a range of dynamic fields. An English degree can complement the following RIT majors:

- Applied Modern Language and Culture
- Business Degrees
- Computer Science BS

- Criminal Justice BS
- Digital Humanities and Social Sciences BS
- Film and Animation BFA
- Game Design and Development BS
- Human-Centered Computing BS
- Illustration BFA
- Marketing BS
- New Media Interactive Development BS

In addition, an English bachelor's degree is an excellent major for those wishing to pursue careers in law or medicine. RIT's Pre-Law and Pre-Med programs provide academic advising and guidance on course selection to help you build the core competencies needed to become a strong candidate for admission to law school, medical school, or graduate programs in the health professions.

Study Abroad

Opportunities to study abroad enhance your understanding of global cultures. Students may study full-time at a variety of host schools and are able to select courses in their major as well as liberal arts courses. Visit RIT Global to learn more about the range of study abroad programs available, including opportunities at RIT's global campuses in China, Croatia, Kosovo, and Dubai. Recent English study abroad programs have taken place in France, Croatia, and Portugal.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly capable students. This option provides a fast-track pathway to law school in which students earn a bachelor's degree and a Juris Doctorate degree in six years. In the 3+3 option, students may apply to the option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's English degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Cooperative education and internships are strongly encouraged for students in the English major.

Curriculum

English, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ENGL-101	English Studies	1
ENGL-210	Literature and Cultural Studies (WI-GE)	3
ENGL-215	Text & Code (WI-GE)	3
YOPS-10	RIT 365: RIT Connections	0
Choose one of the following:		3
ENGL-211	Introduction to Creative Writing: Prose and Poetry (WI-GE)	
ENGL-212	Introduction to Creative Writing: Forms and Styles (WI-PR)	
	General Education - First Year Writing (WI)	3
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Global Perspective	3
	General Education - Social Perspective	3
	General Education - Elective	3
	Open Elective	2
Second Year		
ENGL-250	Data Methods for English Majors	3
ENGL-275	Storytelling: [Genre/Theme]	3
	English Concentration Course 1, 2 §	6
	General Education - Natural Science Inquiry Perspective‡	3
	General Education - Scientific Principles Perspective	3
	General Education - Mathematical Perspective A	3
	General Education - Immersion 1, 2	6
Third Year		
	Professional Elective Course 1	3
	English Concentration Course 3, 4, 5 §	9
	General Education - Mathematical Perspective B	3
	General Education - Immersion 3	3
	General Education - Electives	9
	Open Elective	3
Fourth Year		
ENGL-500	Capstone in English	3
	Professional Elective Course 2, 3, 4	9
	English Concentration Course 6 §	3
	General Education - Electives	6
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† English Internship (ENGL-498) or English Co-op (ENGL-499) is recommended in the summer prior to the final year of study.
‡ Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, the student must take both the lecture and the lab portion.
§ Students are required to complete at least one course at the 400-level or above as part of the concentration.

English Concentrations §

Literature & Media

ENGL-301	The Art of Poetry
ENGL-302	The Short Story
ENGL-304	Drama & Theater
ENGL-307	Mythology & Literature
ENGL-308	Shakespeare Drama
ENGL-309	Topics in Literary Forms
ENGL-312	American Literature
ENGL-313	British Literature
ENGL-314	Ethics in the Graphic Memoir
ENGL-315	Digital Literature
ENGL-316	Global Literature
ENGL-318	Popular Literature
ENGL-322	Literary Geographies
ENGL-328	Rhetoric of Science
ENGL-330	Rhetoric of Health and Medicine
ENGL-333	Rhetoric of Terrorism
ENGL-345	History of Madness
ENGL-353	Fantasy
ENGL-373	Media Adaptation
ENGL-374	Games & Literature
ENGL-375	Storytelling Across Media
ENGL-376	Experimental Writing
ENGL-377	Transmedia Storyworlds
ENGL-381	Science Writing
ENGL-391	Dangerous Texts
ENGL-400	Literary & Cultural Studies
ENGL-410	Film Studies
ENGL-413	African-American Literature
ENGL-414	Topics in Women's and Gender Studies
ENGL-418	Great Authors
ENGL-419	Literature and Technology
ENGL-420	Science Fiction
ENGL-422	Maps, Spaces and Places
ENGL-450	Free and Open Source Culture
ENGL-472	Topics in Rhetoric and Literacy Studies

Creative Writing

ENGL-386	World Building Workshop
ENGL-389	Digital Creative Writing Workshop
ENGL-390	Creative Writing Workshop
ENGL-392	Queer and Trans Creative Writing Workshop
ENGL-490	Advanced Creative Writing Workshop
ENGL-511	Advanced Topics in Creative Writing
ENGL-543	Game-Based Fiction

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without an associate degree

Courses in liberal arts, math, science, and computer science

Appropriate associate degree programs for transfer

Liberal arts with an emphasis in communication and a technical field such as business, photography, or computer science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

History, BS

www.rit.edu/study/history-bs

Tamar Carroll, Associate Professor
585-475-6913, twcgsh@rit.edu

Program overview

The past will always shape the future as our understanding of who we are and what we value continues to evolve. The ability to reflect on history, examine the human condition, and critically analyze the past as a guide to the present and future is part of what it means to be human and to live in human communities. A history degree not only encourages you to develop a lifelong passion for critical thinking, but also leads you to become a better local and global citizen, an effective communicator, an active participant in civil discourse, and an informed creator and consumer of media and technology. RIT's history BS will equip you to understand the past and the means by which it shapes the present.

Focus on acquiring content knowledge and mastering historical methodologies. Understanding content provides intricate expertise in eras, fields, and topics—all of which are not only important in their own right but also are relevant to other disciplines that incorporate historical themes. A bachelor's in history enables you to conduct your own research–to collect, evaluate, analyze, synthesize, and interpret evidence and data.

Central to RIT's history BS is building you technological expertise necessary to study and craft history in the digital age. These skills separate RIT's history BS graduates from graduates at other institutions. As a result, you will learn to:

- Collect, organize, and critically appraise a variety of evidence and data (primary and secondary sources).
- Construct effective interpretations, arguments, and presentations based on the analysis of evidence and data.
- Manage projects based on research, analysis, and the communication of findings and results.
- Become well-prepared for graduate-level study in history or a related field, such as business, education, government, journalism, law, and public service.

History BS Specializations

You will choose one of four thematic specializations in which you'll gain a deeper understanding in a particular area of history. Thematic specializations include:

- U.S. History
- Global History
- Deaf and Disability Studies
- History of the Environment, Science, and Technology

Capstone Project

The capstone project is the final core requirement of the history degree and serves as an opportunity to further develop and sharpen your practice and understanding of history. You'll work with faculty to conceive and develop a senior thesis, and present your research project in front of your peers and program faculty.

History Careers

A bachelor's in history will prepare you for a variety of history careers and for study at the graduate level. Nearly half of those who major in history pursue graduate school in a related discipline. The American Community Survey of the U.S. Census Bureau shows that a significant number of history majors work in fields other than history, including law, management, and primary/secondary education. In fact, 48 percent of history majors go to graduate school.

These statistics further demonstrate how a degree in history serves as strong preparation for graduate training in several different academic and professional fields.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

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RIT's history BS is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

As a history major, you'll complete one co-op or internship, where you will work in a professional setting related to history.

Curriculum

History, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
HIST-101	Making History	3
	Non-Western/Indigenous History Course 1†	3
	Thematic Specialization 1, 2	6
	General Education - First-Year Writing (WI)	3
	General Education - Global Perspective	3
	General Education - Social Perspective	3
	General Education - Natural Science Inquiry Perspective‡	3
STAT-145	Introduction to Statistics I (General Education - Mathematical Perspective A)	3
	General Education - Mathematical Perspective B	3
YOPS-10	RIT 365: RIT Connections	0
Second Year		
ISCH-110	Principles of Computing	3
ISCH-370	Principles of Data Science	3
Choose one of the following:		0
HIST-498	History Internship	
HIST-499	History Co-operative Education	
	Non-Western/Indigenous History Course 2†	3
	Thematic Specialization 3	3
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Scientific Principles Perspective	3
	General Education - Immersion 1, 2	6
	General Education - Elective	3
Year Three		
HIST-326	Digital History	3
HIST-421	Hands-on History (WI-GE)	3
	Thematic Specialization 4	3
	Program Elective 1, 2	6
	General Education - Immersion 3	3
	General Education - Electives	6
	Open Electives	6
Year Four		
HIST-501	Capstone Seminar (WI-PR)	3
	Program Elective 3, 4, 5, 6	12
	General Education - Electives	9
	Open Electives	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, the student must take both the lecture and the lab portion.

†Non-Western or Indigenous History Courses

ANTH-260	Native North Americans
ANTH-265	Native Americans in Film
ANTH-335	Culture and Politics in Latin America
HIST-140	History of the Modern Middle East
HIST-150	World History since 1500
HIST-160	History of Modern East Asia
HIST-201	Histories of Globalization
HIST-210	Culture and Politics in Urban Africa
HIST-252	The United States and Japan
HIST-260	History of Premodern China
HIST-261	History of Modern China
HIST-265	History of Modern Japan
HIST-266	History of Premodern Japan
HIST-310	Global Slavery and Human Trafficking
HIST-360	A Global History of Baseball
HIST-365	Conflict in Modern East Asia
HIST-370	Global History of Religions
HIST-450	Japan in History, Fiction, and Film
HIST-462	East-West Encounters
HIST-465	Samurai in Word and Image
HIST-470	Science, Technology and Imperialism: 1800-1965

Thematic Specializations

U.S. History

ANTH-361	Sociology of Numbers
ANTH-385	Anthropology and History
HIST-102	Themes in U.S. History
HIST-103	The City in History
HIST-125	Public History and Public Debate
HIST-180	Information Revolution
HIST-190	American Women's and Gender History
HIST-191	The History of Families and Children in the U.S.
HIST-199	Survey of American Military History
HIST-221	Introduction to Public History
HIST-230	American Deaf History
HIST-240	Civil War America
HIST-242	The American Revolutionary Era
HIST-245	American Slavery and Freedom
HIST-250	Origins of U.S. Foreign Relations
HIST-251	Modern U.S. Foreign Relations
HIST-252	The United States and Japan
HIST-255	History of World War II
HIST-282	Women, Gender, and Computing
HIST-290	U.S. History since 1945
HIST-301	Great Debates in U.S. History
HIST-322	Monuments and Memory
HIST-323	America's National Parks
HIST-324	Oral History
HIST-325	Museums and History
HIST-340	Rochester Reformers: Changing the World
HIST-350	Terrorism, Intelligence, and War
HIST-351	The Vietnam War
HIST-383	Technology and Global Relations in the American Century
HIST-390	Medicine and Public Health in American History
HIST-439	Biography as History

Global History

ANTH-385	Anthropology and History
HIST-103	The City in History
HIST-104	Themes in European History
HIST-140	History of the Modern Middle East
HIST-150	World History since 1500
HIST-160	History of Modern East Asia
HIST-170	Twentieth Century Europe
HIST-201	Histories of Globalization
HIST-210	Culture and Politics in Urban Africa
HIST-231	Deaf People in Global Perspective
HIST-252	The United States and Japan
HIST-255	History of World War II
HIST-260	History of Premodern China
HIST-261	History of Modern China
HIST-265	History of Modern Japan
IHST-266	History of Premodern Japan
HIST-270	History of Modern France
HIST-275	Screening the Trenches: The History of WWI through Film
HIST-280	History of Modern Germany
HIST-281	Global History of Technology
HIST-310	Global Slavery and Human Trafficking
HIST-322	Monuments and Memory
HIST-350	Terrorism, Intelligence, and War
HIST-351	The Vietnam War
HIST-355	The Holocaust: Event, History, Memory
HIST-360	A Global History of Baseball
HIST-365	Conflict in Modern East Asia
HIST-369	Histories of Christianity
HIST-370	Global History of Religions
HIST-380	International Business History
HIST-383	Technology and Global Relations in the American Century
HIST-439	Biography as History
HIST-450	Japan in History, Fiction, and Film
HIST-462	East-West Encounters
HIST-465	Samurai in Word and Image
HIST-470	Science, Tech, & European Imperialism: 1800-1965

Deaf and Disability Studies

ANTH-361	Sociology of Numbers
HIST-230	American Deaf History
HIST-231	Deaf People in Global Perspective
HIST-238	History of Disability
HIST-330	Deafness and Technology
HIST-333	Diversity in the Deaf Community
HIST-335	Women and the Deaf Community
HIST-430	Deaf Spaces
HIST-431	Theory and Methods of Deaf Geographies

History of the Environment, Science, and Technology

ANTH-361	Sociology of Numbers
HIST-180	Information Revolution
HIST-281	Global History of Technology
HIST-282	Women, Gender, and Computing
HIST-323	America's National Parks
HIST-330	Deafness and Technology
HIST-345	Environmental Disasters
HIST-383	Technology and Global Relations in the American Century
HIST-390	Medicine and Public Health in American History
HIST-470	Deafness and Technology
HIST-480	Global Information Age
STSO-246	History of Women in Science and Engineering
STSO-325	History of the Environmental Sciences
STSO-326	History of Ecology and Environmentalism
STSO-335	Industry, Environment, and Community in Rochester
STSO-345	Makers of Modern Science
STSO-346	Technology in American History
STSO-425	Nature and Quantification
STSO-445	The Natural Sciences in Western History

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

History, BS degree/ Sustainable Systems MS, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
HIST-101	Making History	3
	Non-Western/Indigenous History Course 1†	3
	Thematic Specialization 1, 2	6
	General Education - First-Year Writing (WI)	3
	General Education - Global Perspective	3
	General Education - Social Perspective	3
	General Education - Natural Science Inquiry Perspective‡	3
STAT-145	Introduction to Statistics I (General Education - Mathematical Perspective A)	3
	General Education - Mathematical Perspective B	3
YOPS-10	RIT 365: RIT Connections	0
Second Year		
ISCH-110	Principles of Computing	3
Choose one of the following:		3
ISCH-370	Principles of Data Science	
ANTH-303	Statistics for the Social Sciences	
SOCI-303	Statistics for the Social Sciences	
Choose one of the following:		0
HIST-498	History Internship	
HIST-499	History Co-operative Education	
	Non-Western/Indigenous History Course 2†	3
	Thematic Specialization 3	3
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Scientific Principles Perspective	3
	General Education - Immersion 1, 2	6
	General Education - Elective	3
Year Three		
HIST-326	Digital History	3
HIST-421	Hands-on History (WI-GE)	3
	Thematic Specialization 4	3
	Program Elective 1, 2	6
	General Education - Immersion 3	3
	General Education - Electives	6
	Open Electives	6
Year Four		
HIST-501	Capstone Seminar (WI-PR)	3
Choose one of the following:		3
ISUS-702	Fundamentals of Sustainability	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose one of the following:		3
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy, and Sustainability	
	Program Elective	6
	General Education - Electives	9
	Open Electives	6
Year Five		
Choose two of the following:		6
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose two of the following:		6
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy, and Sustainability	
Choose one of the following:		6
ISUS-780	Graduate Sustainability Capstone	
ISUS-790	Thesis	
	Graduate Sustainability Elective	6
Total Semester Credit Hours		**144**

Please see General Education Curriculum (GE) for more information.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without an associate degree

Courses in liberal arts, science, foreign language, and history

Appropriate associate degree programs for transfer

Liberal arts with social sciences, sciences, or languages

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Humanities, Computing, and Design, BS

www.rit.edu/study/humanities-computing-and-design-bs

Lisa Monette
585-475-4137, lxmgla@rit.edu

Program overview

Humanities, computing, and design is a dynamic field of study that integrates the traditional liberal arts–anthropology, art, communication, English, history, literature, linguistics, museum studies, philosophy, and political science–with advanced digital skills found in computing, information sciences, game design and development, digital technology, human-computer interaction, database management, data analytics, geographic information technologies, and interactivity in new media. The purpose of this degree is to create a bridge between the traditional liberal arts and the digital world, where critical thinking, cultural awareness, and communication must now integrate with digital technologies. The major prepares you for dynamic new career opportunities that are emerging as professionals find new and exciting ways to combine digital technologies and computing into everything from business and communications to education, history, museum studies, politics, public policy, and more.

What is Humanities, Computing, and Design?

Formerly known as digital humanities and social sciences, RIT's humanities, computing and design major pairs digital tools with computing to further anthropology, communication, culture, history, journalism, literature, and the arts. It creates new possibilities for these traditional liberal arts fields by integrating digital technologies, computing skills, visual communication, data analytics, and more.

Career opportunities encompass endless ways to pair digital technologies with the liberal arts. For example:

- Journalists must have a strong foundation in social media and web content strategy as people turn to their digital devices to consume news and information.
- Advertising and marketing on social media are created using traditional market research to identify a target audience and advanced digital technologies to engage and track the behaviors of those users.
- Storytelling in gaming requires a writer to understand the function and gameplay of a particular interactive world as well as the creative writing skills to craft a captivating story.
- Visual communication (infographics, interactive content, motion graphics) is used to present evidence in court cases, to sell products in stores, and to communicate instructions or directions. It must be dynamic, compelling, and effective.
- Museums and cultural institutions are creating new and exciting ways to integrate digital technologies to educate the public, engage visitors, and enhance the guest experience.
- Hotels, amusement parks, and resorts are turning to interactive apps that plan and manage guest experiences, wearables that unlock guest room doors and serve as your admission ticket, and a host of digital tools that enable online check-in, food ordering, and more.

RIT's Humanities, Computing, and Design Program

This major is uniquely interdisciplinary. You'll pair course work in three of RIT's colleges–College of Liberal Arts, the Golisano College of Computing and Information Sciences, and the College of Art and Design–to understand the historical and cultural contexts for, and to think

critically about, how new technologies can impact traditional areas of the liberal arts. Our partnerships within RIT, with the Wallace Center, The Cary Graphic Arts Collection, and The RIT Press, as well as the Library Company of Philadelphia and Malmö University in Sweden, provide distinctive opportunities for imagination and application.

As a student in the major, you will learn to employ a range of tools and techniques, including 3D design visualization, geospatial technology, and electronic literature. The major also fosters critical analysis of digital culture, social media, and digital games. Team-based projects and public engagement are hallmarks of the program.

A Unique Pairing of Courses

The major combines information science and technologies with the liberal arts to provide you with the integrative literacy increasingly necessary for careers in cultural institutions, government, educational institutions, and technology firms. You'll take courses in new media design, web and mobile design and development, database and data modeling, and computing. Professional electives enable you to gain knowledge in areas you can apply directly to your professional pursuits, such as multi-platform journalism, digital design in communication, gaming and literature, 2D animation and asset production, museums in the digital age, and more.

You'll gain broad knowledge as well as expertise in a specialization area. A minor or immersion adds a secondary area of study. You'll also benefit from experiential learning opportunities through cooperative education or internships, team-based projects, and lab courses. A capstone experience culminates in a project that is unique to your professional aspirations. This is a degree program where every student's plan of study is tailored around their professional pursuits. You also will be encouraged to study abroad or pursue an international co-op in order to enhance your understanding of global cultures.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Students in the humanities, computing, and design major are required to complete at least one cooperative education or internship experience.

Curriculum

Humanities, Computing, and Design, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
DHSS-101	Computation and Culture	3
DHSS-102	Industrial Origins of the Digital Age	3
GCIS-123	Software Development and Problem Solving I	4
ISTE-140	Web & Mobile I	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
Second Year		
DHSS-103	Ethics in the Digital Era	3
ISTE-230	Introduction to Database and Data Modeling	3
ISTE-240	Web & Mobile II	3
NMDE-111	New Media Design Digital Survey I	3
NMDE-112	New Media Design Digital Survey II	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
	General Education – Immersion 1, 2	6
	General Education – Mathematical Perspective B	3
	General Education – Natural Science Inquiry Perspective	4
Third Year		
DHSS-377	Media Narrative (WI-PR)	3
DHSS-499	DHSS Co-Op (summer)	0
IGME-382	Maps, Mapping and Geospatial Technologies	3
	General Education – Immersion 3	3
	General Education – Scientific Principles Perspective	3
	General Education – Electives	6
	Professional Electives	6
	Project Courses	6
Fourth Year		
DHSS-489	DHSS Capstone I	3
DHSS-490	DHSS Capstone II	3
	General Education – Electives	9
	Open Electives	12
	Professional Elective	3
Total Semester Credit Hours		**122**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Professional Electives

COMM-223	Digital Design in Communication
COMM-263	Data Journalism
COMM-343	Technology-Mediated Communication
COMM-356	Critical Practice in Social Media
COMM-357	Communication, Gender, and Media
COMM-461	Multiplatform Journalism
CRIM-290	Computer Crime
DHSS-488	Special Topics
ENGL-215	Text & Code
ENGL-315	Digital Literature
ENGL-373	Media Adaptation
ENGL-374	Games and Literature
ENGL-375	Storytelling Across Media
ENGL-386	World Building Workshop
ENGL-389	Digital Creative Writing Workshop
ENGL-450	Free & Open Source Culture
ENGL-543	Game-Based Fiction Workshop
FNRT-215	Video Game Criticism
HIST-324	Oral History
HIST-326	Digital History
HIST-480	Global Information Age
IGME-101	New Media Interactive Design Algorithmic Problem Solving I
IGME-102	New Media Interactive Design Algorithmic Problem Solving II
IGME-119	2D Animation and Asset Production
IGME-220	Game Design & Development I
IGME-320	Game Design & Development II
IGME-384	Introduction to Geographic Information Systems

LING-351	Language Technology
LING-581	Intro to Natural Language Processing
MUSE-225	Museums & the Digital Age
MUSE-359	Digital and Critical Curation
MUSE-360	Visitor Engagement & Museum Technologies
PHIL-307	Philosophy of Technology
PHIL-314	Philosophy of Vision and Imaging
STSO-441	Cyborg Theory: (Re)thinking the Human Experience in the 21st Century
VISL-383	Traumatic Images

Project Courses

ENGL-422	Maps, Spaces, and Places
ENGL-543	Game-Based Fiction Workshop
FNRT-329	Virtual Worlds
IGME-580	IGM Production Studio
IGME-581	Innovation & Invention
IGME-589	Research Studio
MUSE-354	Exhibition Design
NMDE-201	New Media Design Elements II
NMDE-203	New Media Design Interactive II
NMDE-302	New Media Design Graphical User Interface
VISL-377	Imag(in)ing Rochester
VISL-383	Traumatic Images
VISL-384	Art of Dying

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Liberal arts courses and basic information technology or computer science course work

Appropriate associate degree programs for transfer

Liberal arts with web development courses, and some information technology or computer science course work

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

International and Global Studies, BS

www.rit.edu/study/international-and-global-studies-bs
Lisa Monette
585-475-4137, lxmgla@rit.edu

Program overview

The impact of global change is dramatic and far-reaching, altering the dynamics of everyday life. The international studies major aims to transform students into global experts who can assess and analyze the salient issues of worldwide transformation, including consumer capitalism, media culture, economic development and migration, gender and health, political conflict, sustainable futures, and the predicaments of democracy and civil society. Students in the international studies major are well-prepared for careers that demand an understanding of global cultural, social, economic, political, and environmental processes.

The BS in international and global studies offers an exciting range of courses from anthropology, economics, performing arts and visual culture, history, international business, linguistics, global works of literature, modern languages and culture studies, philosophy, political science, public policy, and sociology. This disciplinary diversity pledges not only to deliver a solid education in international studies but also introduces students to cutting-edge knowledge and expertise in global issues and world problems that will boost career opportunities.

All students complete a core concentration in globalization and choose a field specialization in one of the following areas: African studies; Asian studies; European studies; gender studies; Global Justice, Peace, and Conflict Studies; Indigenous studies; international business; Latina American studies; Middle Eastern studies; or sustainable futures. In addition, students complete an integrated international experience that encourages students to participate in a study abroad opportunity, an internship, or a cooperative educational experience in the selected world region of study.

Enhanced Career Opportunities

Building on the core curriculum, the range of choices of specialization allows students to flexibly develop the expertise required for successful career options: whether employment in state and federal agencies, private enterprise, and non-profit organizations or graduate studies. Our students are well prepared for graduate studies in fields like international law, international development, global education, administration, public policy, and the social sciences.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly qualified students. This option provides a fast-track pathway to law school where you can earn a bachelor's degree and a Juris Doctorate in six years. You may apply to the 3+3 option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's international and global studies degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

The major encourages students to participate in a study abroad opportunity, an internship, or a cooperative educational experience in the selected world region of study.

Internships may also be available with organizations that are engaged with global issues, human rights, or international populations, including refugees and immigrants. A number of students have worked as interns under the supervision of human rights lawyers for the New York State Division of Human Rights in Rochester, NY, and for the United Nations Association of Rochester. These international experiences enhance employment prospects after graduation.

Integrated International Experience

Students have lived and studied in diverse locations such as Japan, Australia, Senegal, France, Denmark, Germany, France, Italy, Spain, Brazil, and Costa Rica, or at one of RIT's global campuses: RIT China, RIT Croatia, RIT Dubai, or RIT Kosovo.

Curriculum

International and Global Studies, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
INGS-101	Global Studies	3
UWRT-150	First-Year Writing: FYW: Writing Seminar (WI) (General Education)	3
	General Education – Electives	6
	Globalization Concentration Elective	3
	Open Elective	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education - Mathematical Perspective A	3
Second Year§		
	General Education – Mathematical Perspective B	3
	General Education – Immersion 1	3
	General Education – Social Perspective	3
	General Education Elective	3
	Modern Language Courses (intermediate level)‡	6
	Field Specialization Elective	3
	Globalization Concentration Electives	9
Third Year§		
	Advanced Study Course	3
	General Education – Immersion 2, 3	6
	General Education – Natural Science Inquiry Perspective†	3
	Globalization Concentration Elective	3
	Field Specialization Electives	6
	General Education – Elective	3
	INTLSTU Methods Elective 1, 2	6
Fourth Year§		
INGS-501	Capstone Seminar (WI-PR)	3
	General Education – Scientific Principles Perspective	3
	General Education – Electives	12
	Field Specialization Elective	3
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, the student must take both the lecture and lab portions to satisfy the requirement.
‡ Modern language courses: Students without prior proficiency in a foreign language should take the beginning level language sequence as prerequisite(s) for the intermediate level in the LAS electives.
§ After the first year students are highly encouraged to complete an international experience by choosing a study abroad experience or an internship or co-op. The experience may be completed during the summer or during the academic year.

Methods Electives

Choose two of the following:	
ANTH-302/SOCI-302	Qualitative Research
ANTH-361	Sociology of Numbers
ECON-403	Econometrics I
ISCH-110	Principles of Computing
ISTE-140	Web and Mobile I
SOCI-303	Statistics in the Social Sciences
SOCI-361	Sociology of Numbers
STAT-145	Introduction to Statistics I

Concentrations

Students in the major will select five electives in the Core Concentration in Globalization.

Globalization

ANTH-210	Culture and Globalization
ANTH-235	Immigration to the U.S.
ANTH-270	Cuisine, Culture, and Power
ANTH-295	Global Public Health
ANTH-341	Global Addictions
ANTH-345	Genocide and Transitional Justice
ANTH-360	Humans and their Environment
ANTH-410	Global Cities
ANTH-425	Global Sexualities

ANTH-430	Visual Anthropology
COMM-346	Global Media
ECON-201	Principles of Macroeconomics
ECON-405	International Trade and Finance
ECON-406	Global Economic Issues
ECON-448	Development Economics
HIST-201	Histories of Globalization
HIST-281	Global History of Technology
HIST-383	Technology and Global Relations in the American Century
HIST-480	Global Information Age
INGS-489	Topics in Global Studies
POLS-210	Comparative Politics
POLS-220	Global Political Economy
POLS-325	International Law and Organizations
POLS-330	Human Rights in Global Perspectives
POLS-335	Politics in Developing Countries
POLS-360	International Political Thought
SOCI-295	Global Public Health
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
SOCI-395	Borders: Humans, Boundaries, and Empires

Field Specializations

Students in the major will choose one of the following ten tracks or "field specializations" and select four courses from the track electives.

African studies

ANTH-310	African Film
ANTH-345	Genocide and Transitional Justice
FNRT-323	Survey of African American Music
HIST-245	American Slavery and Freedom
INGS-489	Topics in Global Studies*
SOCI-210	Black America-Culture & HipHop
	Modern Language Elective† (beyond intermediate)

* INGS-489 may be used when the topic is pertinent to African studies.
† Modern Language Elective may be used when the language is pertinent to the region.

Asian Studies

HIST-160	History of Modern East Asia
HIST-252	The United States and Japan
HIST-260	History of Premodern China
HIST-261	History of Modern China
HIST-265	History of Modern Japan
HIST-266	History of Premodern Japan
HIST-351	The Vietnam War
HIST-365	Conflict in Modern East Asia
HIST-450	Japan in History, Fiction, and Film
HIST-462	East-West Encounters
HIST-465	Samurai in Word and Image
INGS-489	Topics in Global Studies*
MLCH-151	Food, Art & Thought in Chinese Culture
MLCH-352	Globalization and Gender Through Chinese Cinema: From Kungfu to World Factoy
MLJP-351	Languages in Japanese Society
PHIL-311	East Asian Philosophy
POLS-350	Politics of East Asia
POLS-351	Politics of China
	Modern Language Elective† (beyond intermediate)

* INGS-489 may be used when the topic is pertinent to Asian studies
† Modern Language Elective may be used when the language is pertinent to the region.

European Studies

ENGL-316	Global Literature
HIST-170	Twentieth-Century Europe
HIST-270	History of Modern France
HIST-280	History of Modern Germany
HIST-369	Histories of Christianity
INGS-489	Topics in Global Studies*
MLFR-151	Film, Comics, and French Culture
MLFR-351	French Film and Hollywood
MLFR-352	The French Heritage in Films
MLGR-351	Modern German Culture through Film
MLIT-351	Italian Cinema from Neorealism to the New Millennium
MLSP-315	Hispanic Culture & Civilization
PHIL-201	Ancient Philosophy
PHIL-203	Modern Philosophy
PHIL-317	Renaissance Philosophy
PHIL-408	Critical Social Theory
PHIL-409	Existentialism
PHIL-410	Medieval Philosophy
PHIL-412	Nineteenth-Century Philosophy
PHIL-417	Continental Philosophy
	Modern Language Elective† (beyond intermediate)

* INGS-489 may be used when the topic is pertinent to European studies.
† Modern Language Elective may be used when the language is pertinent to the region.

Gender Studies

ANTH-246	Gender and Health
ANTH-325	Bodies and Culture
ANTH-425	Global Sexualities
ECON-451	Economics of Women and the Family
ENGL-414	Women and Gender in Literature and Media
INGS-489	Topics in Global Studies*
PHIL-309	Feminist Theory
SOCI-235	Women, Work, and Culture
SOCI-246	Gender and Health
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
STSO-342	Gender, Science, and Technology
VISL-206	Queer Looks

* INGS-489 may be used when the topic is pertinent to gender studies.

Global Justice, Peace, and Conflict Studies

ANTH-345	Genocide & Transitional Justice
COMM-304	Intercultural Communication
HIST-251	Modern U.S. Foreign Relations
HIST-350	Terrorism, Intelligence, and War
HIST-351	The Vietnam War
HIST-470	Science, Tech, & European Imperialism: 1800-1965
INGS-489	Topics in Global Studies*
MLSP-353	Trauma and Survival in First Person Narrative
PHIL-304	Philosophy of Law
PHIL-305	Philosophy of Peace
PHIL-403	Social and Political Philosophy
POLS-210	Comparative Politics
POLS-325	International Law and Organizations
POLS-440	War and the State
POLS-445	Terrorism and Political Violence
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-395	Borders: Humans, Boundaries, and Empires

* INGS-489 may be used when the topic is pertinent to global justice, peace, and conflict studies.

Indigenous Studies

ANTH-220	Language and Culture: Introduction to Linguistic Anthropology
ANTH-255	Regional Archaeology*
ANTH-260	Native North Americans
ANTH-265	Native Americans in Film
ANTH-312	People before Cities
ANTH-335	Culture and Politics in Latin America
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-375	Native American Cultural Resources and Rights
ANTH-430	Visual Anthropology
INGS-489	Topics in Global Studies†
SOCI-361	Sociology of Numbers

* ANTH-255 may be used when the topic is North America or Mesoamerica.
† INGS-489 may be used when the topic is pertinent to Indigenous studies.

International Business

ECON-405	International Trade and Finance
ECON-406	Global Economic Issues
HIST-380	International Business History
INTB-225	Global Business Environment
INTB-300	Cross-Cultural Management
INTB-310	Regional Business Studies
INTB-489	Seminar in International Business
INTB-550	Competing Global
MKTG-330	Global Marketing
POLS-220	Global Political Economy

Latin American Studies

ANTH-235	Immigration to the U.S.
ANTH-255	Regional Archaeology: Mesoamerica
ANTH-335	Culture and Politics in Latin America
ANTH-410	Global Cities
ENGL-316	Topics in Global Literatures*
INGS-489	Topics in Global Studies†
MLSP-315	Culture & Civilization

MLSP-351	Gender and Sexuality in Hispanic Studies
MLSP-352	Caribbean Cinema
MLSP-353	Trauma and Survival in the First-Person Narrative
POLS-335	Politics in Developing Countries
	Modern Language Elective‡ (beyond intermediate)

* ENGL-316 may be used when the topic is pertinent to Latin American studies.
† INGS-489 may be used when the topic is pertinent to Latin American studies.
‡ Modern Language Elective may be used when the language is pertinent to the region.

Middle Eastern Studies

ANTH-255	Regional Archaeology: Middle East
INGS-489	Topics in Global Studies*
POLS-335	Politics in Developing Countries
	Arabic Modern Language Elective (beyond intermediate)

* INGS-489 may be used when the topic is pertinent to Middle Eastern studies.

Sustainable Futures

ANTH-270	Cuisine, Culture, and Power
ANTH-295	Global Public Health
ANTH-360	Humans and their Environment
ANTH-410	Global Cities
ECON-448	Development Economics
IGME-382	Maps, Mapping, and Geospatial Technologies
IGME-384	Introduction to Geographic Information Systems
INGS-489	Topics in Global Studies*
PHIL-308	Environmental Philosophy
POLS-220	Global Political Economy
POLS-335	Politics in Developing Countries
SOCI-295	Global Public Health
SOCI-322	Health and Society
STSO-220	Environment and Society
STSO-330	Energy and the Environment
STSO-341	Biomedical Issues: Science and Technology
STSO-441	Cyborg Theory: (Re)thinking the Human Experience in the 21st Century

* INGS-489 may be used when the topic is pertinent to sustainable futures.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

International and Global Studies, BS degree/Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
INGS-101	Global Studies	3
YOPS-010	RIT 365: RIT Connections	0
	General Education - Global Perspective	3
	General Education - Electives	6
	General Education - Ethical Perspective	3
	General Education - Artistic Perspective	3
	General Education - Mathematical Perspective A	3
UWRT-150	General Education - First Year Writing: FYW Writing Seminar (WI)	3
	INTLSTU Globalization Concentration Elective	3
	Open Elective	3
Second Year		
	INTLSTU Globalization Concentration Elective	9
	INTLSTU Methods Elective 1	3
	Modern Language Intermediate Courses	6
	Field Specialization Elective	3
	General Education - Social Perspective	3
	General Education - Mathematical Perspective B	3
	General Education - Immersion 1	3
Third Year		
	General Education - Immersions 2, 3	6
	Field Specialization Electives	6
	Globalization Concentration Elective	3
	General Education - Natural Science Inquiry Perspective‡	3
	Advanced Study Option	3
	General Education - Elective	3
	INTLSTU Methods Elective	3
	Open Elective	3
Fourth Year		
INGS-501	Capstone Seminar (WI-PR)	3
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
	Field Specialization Elective	3
	General Education - Scientific Principles Perspective	3
	General Education - Electives	15
Fifth Year		
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	Public Policy Electives	9
Choose one of the following:		6
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam (plus 2 Graduate Electives)	
PUBL-785	Capstone Research Experience	
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, science, foreign language, and history

Appropriate associate degree programs for transfer

Liberal arts with social sciences, sciences, or languages

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Journalism, BS

www.rit.edu/study/journalism-bs
Lisa Monette
585-475-4137, lxmgla@rit.edu

Program overview

The journalism degree prepares you to gather, critically analyze, and synthesize verbal and visual information to communicate accurate and clear news stories across multiple media platforms. In addition to writing and reporting, you will prepare audio and visual content for dissemination in a variety of media, making you an experienced and valuable asset to any future employer specializing in news reporting and factual storytelling.

The bachelor's in journalism is enhanced by RIT's reputation for using cutting-edge technology, yet is grounded in the traditional reporting and writing skills needed by professional journalists. The journalism degree prepares you for a converged digital media world. Learn the conceptual and practical skills demanded by the digital newsroom through a combination of journalism, communication, and applied professional courses, along with a professional core of courses. In RIT's journalism bachelor's you are required to complete one block of cooperative education experience.

Plan of Study

Develop skills through a core of required communication courses, which cover news writing, news editing, multi-platform journalism, communication theory, mass communications, law and press ethics, and computer-assisted reporting. A professional core of four courses, chosen from the colleges of Art and Design, Business, or Computing and Information Sciences, introduces you to photojournalism, multimedia, web development, digital entrepreneurship, and building a web business. Journalism electives, free electives, and liberal arts courses complete the curriculum.

Senior Project: In a senior capstone course, apply what you've learned to a project similar to one you would encounter in the journalism industry. You will produce a long-form piece of journalism, a website, and a digital portfolio of selected works.

Advising

Every journalism bachelor's student is assigned a professional academic advisor and a faculty mentor in the department of communication. The professional advisor assists with course planning and registration; the faculty mentor provides advising about career development and planning, including information about research opportunities, graduate school, and jobs. Peer mentors, who are upper-level journalism students, are available to answer questions about classes, clubs on campus, student-run activities, and other matters from the student's perspective. For more information, please refer to the college's academic advising page.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

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RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly qualified students. This option provides a fast-track pathway to law school where you can earn a bachelor's degree and a Juris Doctorate in six years. You may apply to the 3+3 option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's journalism degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Further your Education in Journalism

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

Journalism BS/Communication MS: An accelerated dual-degree program that builds on a foundation in journalism, news media, and contemporary reporting to deepen expertise in strategic communication methods and channels such as social media; applications for artificial intelligence; visual storytelling and data representation; organizational communication; engagement data analysis; and more.

+1 MBA Early Acceptance Pathway: Successful RIT applicants who are offered admission into the BS degree in journalism as an incoming first-year student may also be offered conditional early acceptance into the +1 MBA Early Acceptance Pathway. This option enables you to earn both your BS degree and an MBA in as little as five years of study. Learn how the +1 MBA Early Acceptance Pathway can help you add a competitive advantage to your studies.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Students in the journalism degree are required to complete one semester of a cooperative education or internship experience.

Curriculum

Journalism, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
COMM-261	History of Journalism	
COMM-271	Introduction to Journalism	
COMM-272	Reporting and Writing I (WI-PR)	3
COMM-280	Community Journalism	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective†	3
	General Education – Ethical Perspective†	3
	General Education – First-Year Writing (WI)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
	Professional Core Course	3
Second Year		
COMM-105	Foundations of Communication	3
COMM-263	Data Journalism	3
COMM-374	Opinion Media	3
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – Natural Science Inquiry Perspective‡	3
	General Education – Scientific Principles Perspective	3
	General Education – Immersion 1, 2	6
	Professional Core Course	3
Third Year		
COMM-342	Communication Law and Ethics	3
COMM-370	Ethnic Press in the United States	3
COMM-450	Multiplatform Production and Publishing	3
COMM-499	Communication Co-Op (summer)	0
	Professional Core Course	3
	General Education – Immersion 3	3
	General Education – Electives	9
	Open Electives	6
Fourth Year		
COMM-497	Communication Portfolio	0
COMM-561	Senior Project	3
	Professional Core Courses	6
	General Education – Electives	12
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students may elect to enroll in VISL-388, Gender and Contemporary Art, for the General Education Artistic Perspective, and either UWRT-365, Writing, Public Speaking and Civil Engagement, or VISL-320, Contemporary Cinema: Fact and Fiction, for the General Education Ethical Perspective, if such courses are of interest to them.
‡ Students will satisfy this requirement by taking either a 3 or 4 credit hour lab science course. If a science course consists of separate lecture and laboratory sections, the student must take both the lecture and the lab portion.

Professional Core

Required courses	
COMM-223	Digital Design in Communication
COMM-291	Communication for Social Change
PHAR-203	Elements of Photojournalism
PHPJ-315	Non-Fiction Multimedia
Choose one of the following:	
PROF-221	New Venture Development
COMM-489	Topics in Communication
DDDD-101	Introduction to Modeling and Motion
HIST-301	Great Debates in US History
MGIS-360	Building a Web Business
MGMT-360	Digital Entrepreneurship

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Journalism, BS degree/Communication, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
COMM-261	History of Journalism	
COMM-271	Introduction to Journalism	
COMM-272	Reporting and Writing for News Media (WI-PR)	3
COMM-280	Community Journalism	3
YOPS-10	RIT 365: RIT Connections	0
	Professional Core	3
	General Education - First Year Writing (WI)	3
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Global Perspective	3
	General Education - Social Perspective	3
	General Education - Elective	3
Second Year		
COMM-105	Foundation of Communication	3
COMM-263	Data Journalism	3
COMM-374	Opinion Media	3
	Professional Core	3
	General Education - Natural Science Inquiry Perspective‡	3
	General Education - Scientific Principles Perspective	3
	General Education - Mathematical Perspective A	3
	General Education - Mathematical Perspective B	3
	General Education - Immersion 1, 2	6
Third Year		
COMM-342	Communication Law and Ethics	3
COMM-370	Ethnic Press in the United States	3
COMM-450	Multiplatform Production & Publishing	3
COMM-499	Communication Co-Op (Summer)	0
	Professional Core	3
	General Education - Immersion 3	3
	General Education - Electives	9
	Open Electives	6
Fourth Year		
COMM-497	Communication Portfolio	0
COMM-561	Senior Project	3
COMM-714	Strategic Communication	3
	MS Communication Elective	3
	Professional Core	6
	General Education - Electives	6
	Open Electives	9
Fifth Year		
COMM-702	Communication Theories	3
COMM-703	Research Methods in Communication	3
COMM-720	Thesis Preparation Seminar	0
Choose one of the following:		6
COMM-800	Communication Thesis/Project	
COMM-801	Comprehensive Exam plus Two Electives**	
	MS Communication Elective	3
	MS Professional Core	9
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
** These electives can be from the MS Professional Core or MS Communication Electives, or a combination of both.
‡ Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, student must take both the lecture and lab portions to satisfy the requirement.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, math, science, and computer science

Appropriate associate degree programs for transfer

Liberal arts with emphasis in communication and a technical field such as business, photography, or computer science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Liberal Arts Exploration

www.rit.edu/study/liberal-arts-exploration

Lisa Monette
585-475-4137, lxmgla@rit.edu

Program overview

Many students excel in the humanities, and they love the history, English, and social science courses they took in high school. But some are unsure which direction to choose when it comes to picking a college major. Liberal arts exploration gives you the time to figure out who you are and better understand the kind of work you love to do. Through intensive one-on-one advising, meetings with faculty members, and hundreds of courses to choose from, you can take the time to explore your personal and career interests before committing to a major. You'll gain a better understanding of your goals and interests, as well as your career aspirations, as you remain on track to graduate in four years.

Liberal arts exploration is an undeclared option designed to allow students to complete required liberal arts, mathematics, and science courses while actively pursuing career exploration and receiving individualized academic advising. Students may stay in the option for up to two years (or 60 credit hours) before they must choose a major. The option offers students the flexibility and time to explore a variety of majors within the College of Liberal Arts without delaying their graduation.

Curriculum

Liberal arts exploration, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
YOPS-10	RIT 365: RIT Connections	0
ITDL-101	Career Exploration Seminar	1
	General Education Perspectives	15
	First Year General Education-Elective	3
	General Education-First Year Writing	3
	General Education-Electives	9
	Wellness Education*	0
Second Year		
CSCI-101	Principles of Computing	3
	General Education Perspectives	6
	General Education-Immersion 1, 2, 3	9
	General Education-Electives	12
Total Semester Credit Hours		**61**

Please see General Education Framework for more information.
* Please see Wellness Education Requirements for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Museum Studies, BS

www.rit.edu/study/museum-studies-bs
Juilee Decker, Professor
585-475-4206, jdgsh@rit.edu

Program overview

Museums, archives, libraries, and other cultural institutions seek emerging professionals who can help develop and implement strategies to digitize, exhibit, manage, curate, and interpret their artistic, cultural, historical, and scientific collections, and to make them available to the public in interactive and engaging ways. Museum studies provide a thorough grounding in the history, theory, and practice of institutional collecting, exhibition development and design, multi-platform technologies, collection management, fundraising, and grant writing. You'll be prepared to help institutions share their collections, engage with their communities, and enhance, assess, and improve the visitor experience.

RIT's Museum Studies Program

At RIT, museum studies is an interdisciplinary, technology-infused major that prepares you for careers in museums, archives, libraries, galleries, historical societies, and other cultural organizations.

Three principles guide our program and your academic experience:

- tech-infused and collections-based curriculum, projects, and initiatives, making use of RIT's resources from across campus, including the new makerspace in the SHED;
- collaboration across campus and in the community to highlight the interdisciplinary nature of museum work; and
- equity-focused work that can take many forms, including foregrounding under-studied narratives from Rochester's history and democratizing access to technology.

The museum studies degree at RIT includes a set of introductory core courses to familiarize you with the history, theory, and practice of institutional collecting. These courses are bolstered by classes in exhibition development, education and interpretation, and multi-platform interpretation and design. To broaden and deepen your knowledge, you will choose from a selection of electives that cover a range of topics and areas of studies that can speak to your interests and passions.

You will also complete at least one internship experience in a cultural institution or similar entity. Students have recently been placed as interns locally, nationally, and internationally.

Recent local placements include: Genesee Country Village & Museum; George Eastman Museum; Memorial Art Gallery; Strong, National Museum of Play; Out Alliance; India Community Center; and the Rochester Public LIbrary. Beyond Rochester, students have served as interns at the Penn Museum; Baseball Hall of Fame; Smithsonian Institution; National Park Service; and National Geographic.

Overall, the museum studies curriculum is anchored around museum studies courses that reflect current opinion about necessary skill sets, competencies, and subject areas identified by the Museum Studies Network (MSN) of the American Alliance of Museums (AAM), International Council of Museums (ICOM), and the National Council on Public History (NCPH). You will also acquire skills of critical reflection, sound argumentation, and presentation of information to public audiences in a variety of formats.

Jobs in Art Museums... and Historical Sites, Cultural Institutions, Archives, and So Much More

A career in museums, archives, libraries, other cultural institutions or cognate fields awaits you! The good news is that the occupational outlook for archives and museums is very good, with a 12% growth predicted in the next decade, and the outlook for libraries is good, with a 6% growth for library media specialists predicted by the Bureau of Labor Statistics in the next decade.

Upon graduation, you will be prepared for a variety of positions in museums, historical sites, historical societies, libraries, archives, and corporations or other organizations with cultural repositories that develop and implement strategies to digitize, exhibit, manage, curate, and interpret their artistic, cultural, historical, and scientific collections, and to make them available to the public in interactive and engaging ways.

You may also wish to further your education in graduate programs in library and information science, archival studies, informatics, or a number of disciplines including art history and related humanities fields, business, color science, imaging science, and other disciplines that can build upon the firm foundation of liberal arts and tech-infused courses and projects that are cornerstones of the museum studies degree program.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly qualified students. This option provides a fast-track pathway to law school where you can earn a bachelor's degree and a Juris Doctorate in six years. You may apply to the 3+3 option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's museum studies degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Further Your Education in Museum Studies

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Students in museum studies are required to complete one co-op or internship experience in a cultural institution. Co-ops are usually a summer or semester in duration. Internships may be full- or part-time and are often completed during the semester. They vary in duration depending on the organization. Co-ops and internships may be completed locally, nationally, or internationally.

Curriculum

Museum Studies, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MUSE-220	Introduction to Museums & Collecting (General Education - Social Perspective)	3
MUSE-221	Introduction to Public History (General Education - Elective)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Global Perspective	3
	General Education – Mathematical Perspective A	3
	Specialized Electives I	3
	Museum Studies Electives I,II	6
	General Education - Elective	3
Second Year		
MUSE-224	History & Theory of Exhibitions (General Education - Artistic Perspective)	3
MUSE-340	Introduction to Archival Studies	3
MUSE-341	Museum Education & Interpretation	3
	General Education – Immersion	3
	General Education – Natural Science Inquiry Perspective ‡	3
	General Education – Scientific Principles Perspective	3
	General Education – Mathematical Perspective B	3
	General Education - Elective	3
	Museum Studies Elective III	3
	Open Electives	3
Third Year		
MUSE-354	Exhibition Design	3
MUSE-357	Collections Management & Museum Administration	3
	General Education – Immersion 2	3
	General Education – Elective	6
	Museum Studies Electives IV	3
	Open Elective	6
	Specialized Electives II, III	6
Choose one of the following:		0
MUSE-497	Museum Studies Internship (summer)	
MUSE-498	Museum Studies Co-Op Part Time (summer)	
MUSE-499	Museum Studies Co-op (summer)	
Fourth Year		
MUSE-489	Research Methods (WI-PR)	3
MUSE-490	Senior Thesis in Museum Studies (WI-PR)	3
	General Education – Electives	9
	General Education - Immersion 3	3
	Museum Studies Electives V, VI	6
	Open Electives	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, the student must take both the lecture and lab portions to satisfy the requirement.

Specialized Electives

COURSE	
MUSE-225	Museums & the Digital Age
MUSE-226	Introduction to Digital Cultural Heritage
MUSE-359	Digital and Critical Curation
MUSE-360	Visitor Engagement & Museum Technologies

Museum Studies Electives

COURSE	
ANTH-328	Heritage and Tourism
ANTH-415	Archaeological Science
ARTH-135	Survey: Ancient to Medieval Art
ARTH-136	Survey: Renaissance to Modern Art
CLRS-201	Color Science for the Visual Arts
DHSS-103	Ethics in the Digital Era
HIST-101	Making History
HIST-125	Public History and Public Debate
HIST-322	Monuments and Memory
HIST-323	America's National Parks
HIST-324	Oral History
HIST-325	Museums and History
IMGS-115	Cultural Heritage Imaging
MUSE-241	Topics in Museum Studies: Art, Design, & Exhibition Projects
MUSE-244	Topics in Museum Studies: Museums and Society
MUSE-249	Topics in Archives, Museums, and Community Collections
MUSE-361	Tablet to Tablet: A History of Books
MUSE-388	Gender and Contemporary Art
MUSE-449	Special Topics Museum Studies
SOIS-128	Major Issues in Criminal Justice
STSO-326	History of Ecology and Environmentalism
STSO-510	Interdisciplinary Capstone Seminar
STSO-521	Biodiversity and Society

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, art history, studio arts, photography, business, and chemistry

Appropriate associate degree programs for transfer

Fine arts, Liberal arts, or business/marketing

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Philosophy, BS

www.rit.edu/study/philosophy-bs
Lisa Monette,
585-475-4137, lxmgla@rit.edu

Program overview

Most of the skills required for student and career success—how to learn, how to apply that learning in professional and personal environments, and how to communicate that knowledge—are central to philosophy. Philosophy will teach you to evaluate complex problems, identify and examine underlying principles, investigate issues from diverse perspectives, and communicate clearly in both written and oral forms. The bachelor's in philosophy provides a thorough grounding in core areas of philosophy, such as the history of philosophy, ethics, and logical argumentation, as well as a core competence in another discipline, encouraging students to creatively pursue cross-disciplinary studies.

This philosophy bachelor's provides a thorough grounding in core areas of philosophy (history of philosophy, ethics, and logical argumentation), as well as a four-course specialization within philosophy. Combine philosophy with a core competence (or even a double major) in another discipline, encouraging them to creatively pursue cross-disciplinary studies. The major concludes with an optional senior thesis.

RIT's Degree in Philosophy

Develop skills through a core of philosophy courses that cover the history of philosophy, ethics, and logical argumentation. You will choose a specialization and take four courses dedicated to that topic.

Complete a professional core of courses designed to provide foundational knowledge in a professional/technical discipline outside of philosophy, which complements your studies. A Seminar in Philosophy (PHIL-416) examines a selected area or topic in philosophy at an advanced undergraduate level. Senior Thesis in Philosophy (PHIL-595), which is optional for students, provides an opportunity to integrate philosophy with various fields of application. Philosophy electives, general electives, and liberal arts courses complete the curriculum.

Bachelor's in Philosophy Specializations

Philosophy of mind and cognitive science: Examine the philosophical issues involved in studying intelligence, cognition, identity, consciousness, rationality, creativity and emotion, especially as such concepts and categories are invoked by computer and cognitive scientists, and as they are applied in relation to natural and artificial systems.

Philosophy of science and technology: Examine the concepts, methodologies, and philosophical implications of science and technology, and explores the underlying theories, practices, and consequences of science and technology and their role in shaping societies and their values.

Applied ethics: Examine the ethical underpinnings of different professions as well as the ethical presuppositions and implications of technology, engineering, science, management, and other disciplines. Attention is also given to ethics education within the professions and the role professional ethicists can play in different professional and organizational settings.

Philosophy of social sciences and political philosophy: Examine philosophical issues arising from social and political life as well as the disciplines that study them.

Philosophy of art and aesthetics: Examine how different philosophical frameworks conceive of the various arts and crafts and the forms of creative experience and production with which they are engaged; explore the relationship between aesthetic perception and other forms of experience and judgment, between art and society, between art and ethics, and between art and technology.

History of philosophy: Explores the development and connection of philosophical ideas, concepts, and movements throughout time through an in-depth analysis of major transformative moments and figures, and examines how philosophical positions result from an ongoing conversation with previous thinkers.

Philosophy and law: Prepares for law school and other advanced studies by focusing on the skills and topics important to the study of the law. The courses provide an examination of the theoretical and ethical foundations of the law and an understanding of the logical and epistemological skills useful in evaluating and constructing legal arguments. In addition, a grounding in these topics and skills is valuable in a range of professions outside the legal field.

Advising

Each student is assigned a faculty advisor who assists in planning course schedules, professional/technical core requirements, and a philosophy specialization area. For more information, please refer to the college's academic advising page.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly capable students. This option provides a fast-track pathway to law school in which students earn a bachelor's degree and a Juris Doctorate degree in six years. In the 3+3 option, students may apply to the option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's philosophy degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Cooperative education is strongly encouraged for philosophy majors.

Curriculum

Philosophy, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
PHIL-201	Ancient Philosophy (General Education - Global Perspective)	3
PHIL-202	Foundations of Moral Philosophy	3
PHIL-203	Modern Philosophy (General Education - Ethical Perspective)	3
PHIL-205	Symbolic Logic	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Mathematical Perspective A	3
	General Education - Immersion 1	3
	General Education – Elective	3
	Professional/Technical Core Course	3
Second Year		
	General Education – Social Perspective	3
	General Education – Mathematical Perspective B	3
	General Education – Natural Science Inquiry Perspective ‡	3
	General Education - Immersion 2	3
	Program Electives	9
	Professional/Technical Core Courses	9
Third Year		
	General Education – Scientific Principles Perspective	3
	General Education – Electives	9
	Open Electives	6
	Program Elective	3
	Professional/Technical Core Course	3
	Track Courses	6
Fourth Year		
PHIL-416	Seminar in Philosophy (WI-PR)	3
PHIL-595	Senior Thesis in Philosophy† (WI-PR)	3
	General Education – Immersion 3	3
	General Education – Electives	9
	Open Electives	6
	Track Courses	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students may complete Senior Thesis in Philosophy or they may choose a 400-level philosophy course.
‡ Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, student must take both the lecture and lab portions to satisfy the requirement.

Tracks

Philosophy of mind and cognitive science

COURSE	
Electives	
Choose four of the following	
PHIL-315	Responsible Knowing
PHIL-401	Great Thinkers*
PHIL-402	Philosophy of Science
PHIL-404	Philosophy of Mind
PHIL-407	Philosophy of Action
PHIL-411	Metaphysics
PHIL-414	Philosophy of Language
PHIL-416	Seminar in Philosophy*
PHIL-449	Topics in Philosophy*

Philosophy of science and technology

COURSE	
Electives	
Choose four of the following	
PHIL-307	Philosophy of Technology
PHIL-310	Theories of Knowledge
PHIL-314	Philosophy of Vision and Imaging
PHIL-315	Responsible Knowing
PHIL-316	Bioethics and Society
PHIL-317	Renaissance Philosophy
PHIL-401	Great Thinkers*
PHIL-402	Philosophy of Science
PHIL-405	Philosophy of the Social Sciences
PHIL-408	Critical Social Theory
PHIL-416	Seminar in Philosophy*
PHIL-449	Topics in Philosophy*

Applied ethics

COURSE	
Electives	
Choose four of the following	
PHIL-304	Philosophy of Law
PHIL-305	Philosophy of Peace
PHIL-306	Professional Ethics
PHIL-307	Philosophy of Technology
PHIL-308	Environmental Philosophy
PHIL-309	Feminist Theory
PHIL-315	Responsible Knowing
PHIL-316	Bioethics and Society
PHIL-318	Philosophy of Love, Sex, and Gender
PHIL-401	Great Thinkers*
PHIL-403	Social and Political Philosophy
PHIL-415	Ethical Theory
PHIL-416	Seminar in Philosophy*
PHIL-449	Topics in Philosophy*

Social and political philosophy

COURSE	
Electives	
Choose four of the following	
PHIL-304	Philosophy of Law
PHIL-305	Philosophy of Peace
PHIL-308	Environmental Philosophy
PHIL-309	Feminist Theory
PHIL-311	East Asian Philosophy
PHIL-315	Responsible Knowing
PHIL-316	Bioethics and Society
PHIL-317	Renaissance Philosophy
PHIL-318	Philosophy of Love, Sex, and Gender
PHIL-401	Great Thinkers*
PHIL-403	Social and Political Philosophy
PHIL-405	Philosophy of the Social Sciences
PHIL-408	Critical Social Theory
PHIL-416	Seminar in Philosophy*
PHIL 449	Topics in Philosophy*

Philosophy of art and aesthetics

COURSE	
Electives	
Choose four of the following	
PHIL-303	Philosophy of Art/Aesthetics
PHIL-313	Philosophy of Film
PHIL-314	Philosophy of Vision and Imaging
PHIL-317	Renaissance Philosophy
PHIL-401	Great Thinkers*
PHIL-408	Critical Social Theory
PHIL-413	Philosophy of Literature
PHIL-416	Seminar in Philosophy*
PHIL-417	Continental Philosophy
PHIL-449	Topics in Philosophy*

History of philosophy

COURSE	
Electives	
Choose four of the following	
PHIL-301	Philosophy of Religion
PHIL-311	East Asian Philosophy
PHIL-312	American Philosophy
PHIL-317	Renaissance Philosophy
PHIL-401	Great Thinkers*
PHIL-406	Contemporary Philosophy
PHIL-408	Critical Social Theory
PHIL-409	Existentialism
PHIL-410	Medieval Philosophy
PHIL-412	Nineteenth Century Philosophy
PHIL-416	Seminar in Philosophy*
PHIL-417	Continental Philosophy
PHIL-449	Topics in Philosophy*

Philosophy and law

COURSE	
Electives	
Choose four of the following	
PHIL-304	Philosophy of Law
PHIL-305	Philosophy of Peace
PHIL-306	Professional Ethics
PHIL-310	Theories of Knowledge
PHIL-315	Responsible Knowing
PHIL-316	Bioethics and Society
PHIL-401	Great Thinkers*
PHIL 403	Social and Political Philosophy
PHIL-405	Philosophy of the Social Sciences
PHIL-407	Philosophy of Action
PHIL-416	Seminar in Philosophy*
PHIL-449	Topics in Philosophy*

Metaphysics & Epistemology

COURSE	
Electives	
Choose four of the following	
PHIL-301	Philosophy of Religion
PHIL-310	Theories of Knowledge
PHIL-311	East Asian Philosophy
PHIL-312	American Philosophy
PHIL-314	Philosophy of Vision and Imaging
PHIL-315	Responsible Knowing
PHIL-317	Renaissance Philosophy
PHIL-401	Great Thinkers*
PHIL-402	Philosophy of Science
PHIL-404	Philosophy of Mind
PHIL-405	Philosophy of the Social Sciences
PHIL-406	Contemporary Philosophy
PHIL-407	Philosophy of Action
PHIL-410	Medieval Philosophy
PHIL-411	Metaphysics
PHIL-412	Nineteenth Century Philosophy
PHIL-414	Philosophy of Language
PHIL-416	Seminar in Philosophy*
PHIL-417	Continental Philosophy
PHIL-449	Topics in Philosophy*

* These courses are eligible only when their topic is relevant. Permission to include these courses in a specialization must be approved by the department.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Philosophy, BS degree/ Sustainable Systems MS, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
PHIL-201	Ancient Philosophy (General Education - Global Perspective)	3
PHIL-202	Foundations of Moral Philosophy	3
PHIL-203	Modern Philosophy (General Education - Ethical Perspective)	3
PHIL-205	Symbolic Logic	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Mathematical Perspective A	3
	Open Elective	3
	General Education – Elective	3
	Professional/Technical Core Course	3
Second Year		
	General Education – Social Perspective	3
	General Education – Mathematical Perspective B	3
	General Education – Natural Science Inquiry Perspective ‡	3
	General Education - Immersion	3
	Program Electives	9
	Professional/Technical Core Courses	9
	Open Elective	3
Third Year		
	General Education – Scientific Principles Perspective	3
	General Education – Electives	6
	General Education - Immersion	3
	Open Electives	6
	Program Elective	3
	Professional/Technical Core Course	6
	Track Courses	6
Fourth Year		
PHIL-416	Seminar in Philosophy (WI-PR)	3
PHIL-595	Senior Thesis in Philosophy† (WI-PR)	3
	General Education – Immersion	3
	General Education – Electives	9
	Open Electives	6
	Track Courses6	
Fifth Year		
Choose two of the following:		6
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose two of the following:		6
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy, and Sustainability	6
Choose one of the following:		
ISUS-780	Graduate Sustainability Capstone	
ISUS-790	Thesis	
	Graduate Sustainability Electives	6
Total Semester Credit Hours		**144**

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, math, science, philosophy, and ethics

Appropriate associate degree programs for transfer

Liberal arts

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Political Science, BS

www.rit.edu/study/political-science-bs
Lisa Monette,
585-475-4137, lxmgla@rit.edu

Program overview

The political science major will prepare you for the challenges of life and a career in a world that is increasingly globalized, where the application of biotechnology and biomedicine have become common, and where social computing shapes and influences democratic government and the wider community.

Political Science Major

The political science bachelor of science consists of core courses designed to introduce students to the general themes of political science. The major culminates in a capstone course, which ties together the themes of the program through a seminar and significant writing project.

Political Science BS Tracks

Students are required to choose one track.

- Politics and life sciences: An in-depth study on the political impact of modern biology and biotechnology, and their influence on how we understand ourselves as human beings and citizens. There are few undergraduate political science majors in the country that so fully incorporate both these fields into their curricula, including the opportunity to take courses from the biology and information technology departments as part of their program requirements.
- Digital politics and organization: The development and implementation of technologies that increasingly influence political organization and communication.
- Political institutions: Study the changing role of political institutions in our globalized world.

Political Science Major Electives

Students are required to take seven political science electives from the department's American politics and international relations/comparative government offerings, with a minimum of three courses from each area. The areas are (1) statecraft, emerging democracies, and global governance and (2) deliberative democracy and national government. This requirement recognizes the increasing interdependence of domestic and international politics in this era of globalization.

Double Majors

Double majors are a way to customize your education to best reflect your interests, career goals, and your marketability after you graduate. Students may pursue a double major in political science and a secondary area of study in diverse fields such as computer science, criminal justice, economics, or philosophy.

Advising

Each student is assigned a faculty advisor who assists with course registration, scheduling, course selection, academic concerns, and career counseling. For more information, please refer to the college's academic advising page.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly capable students. This option provides a fast-track pathway to law school in which students earn a bachelor's degree and a Juris Doctorate degree in six years. In the 3+3 option, students may apply to the option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's political science degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Students in the political science major are encouraged to complete a cooperative education, internship, or study abroad experience.

Beginning in the third year, you may participate in cooperative education or an internship, both of which provide you with hands-on experience in a variety of environments, from government agencies, non-profits, and non-governmental agencies to political campaigns. Through these experiences, you will gain employment experience as well as the opportunity to further develop skills in their chosen profession.

Opportunities to study abroad enhance your understanding of global politics and culture. You may study full-time at a variety of host schools and are able to select courses in their major as well as liberal arts courses. Visit RIT Global to learn more about the range of study abroad programs and opportunities available.

Curriculum

Political Science, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
POLS-110	American Politics	3
POLS-120	Introduction to International Relations	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – Elective	3
	Political Science Elective	3
Second Year		
POLS-290	Politics and the Life Sciences	3
POLS-295	Cyberpolitics	3
	Political Science Electives	6
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Natural Science Inquiry Perspective‡	3
	General Education – Immersion 1, 2	6
	Open Elective	3
Third Year		
	Political Science Track Courses	6
	Political Science Electives	6
	Open Electives	6
	General Education – Immersion 3	3
	General Education – Electives	9
Fourth Year		
POLS-530	Political Science Capstone (WI-PR)	3
	Political Science Track Course	3
	Political Science Electives	6
	General Education – Electives	12
	Open Electives	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, student must take both the lecture and lab portions to satisfy the requirement.

Program Tracks

Politics and the Life Sciences

BIOL-201	Cellular and Molecular Biology
BIOL-265	Evolutionary Biology
BIOL-293	Evolution and Creationism
BIOL-321	Genetics
POLS-215	Tech, Ethics, & Global Politics
POLS-285	Environmental Ethics and Political Ecology
POLS-340	Medicine, Morality, and Law
POLS-410	Evolutionary International Relations
POLS-415	Evolution and the Law
POLS-420	Primate Politics
STSO-421	Environmental Policy

Digital Politics and Organization

COMM-343	Technology-Mediated Communication
CSEC-140	Introduction to Cybersecurity
CSEC-201	Programming for Information Security
ISTE-140	Web & Mobile I
ISTE-230	Introduction to Database and Data Modeling
ISTE-240	Web & Mobile II
ISTE-305	Rapid Online Presence
ISTE-330	Database Connectivity and Access
MGIS-320	Database Management Systems
MGIS-425	Database Systems Development
POLS-280	Artificial Intelligence and the Political Good
POLS-305	Political Parties and Voting
POLS-365	Anarchy, Technology & Utopia
POLS-370	Cyberwar, Robots, & the Future of Conflict

Political Institutions

POLS-210	Comparative Politics
POLS-220	Global Political Economy
POLS-310	The Congress
POLS-315	The Presidency
POLS-325	International Law and Organizations
POLS-425	Constitutional Law

Economics and Public Policy

ECON-101	Principles of Microeconomics
ECON-201	Principles of Macroeconomics
ECON-401	Intermediate Microeconomic Theory
ECON-402	Intermediate Macroeconomic Theory
ECON-422	Benefit-Cost Analysis
ECON-430	Managerial Economics
POLS-220	Global Political Economy
POLS-335	Politics in Developing Countries
POLS-345	Politics and Public Policy
POLS-445	Terrorism and Political Violence
PUBL-101	Foundations of Public Policy
PUBL-210	Introduction to Qualitative Policy Analysis
PUBL-301	Public Policy Analysis
PUBL-302	Decision Analysis
PUBL-530	Energy Policy

Political Science Electives

Students are required to take seven courses (21 semester-credits) from the following two areas, with a minimum of three courses (9 semester-credits) in each area.

Statecraft, Emerging Democracies, and Global Governance

POLS-205	Ethics in International Politics
POLS-210	Comparative Politics
POLS-215	Tech, Ethics & Global Politics
POLS-220	Global Political Economy
POLS-280	Artificial Intelligence and the Political Good
POLS-285	Environmental Ethics and Political Ecology
POLS-320	American Foreign Policy
POLS-325	International Law and Organizations
POLS-330	Human Rights in Global Perspective
POLS-335	Politics in Developing Countries
POLS-350	Politics of East Asia
POLS-351	Politics of China
POLS-360	International Political Thought
POLS-370	Cyberwar, Robots, & the Future of Conflict
POLS-375	Grand Strategy
POLS-390	Greece and the Political Imagination
POLS-390H	Greece and the Political Imagination
POLS-410	Evolutionary International Relations
POLS-440	War and the State
POLS-445	Terrorism and Political Violence
POLS-455	Comparative Public Policy
POLS-525	Special Topics in Political Science
POLS-541	Peacekeeping and Conflict Transformation
POLS-542	War, Diplomacy, and State-Building

Deliberative Democracy and National Government

POLS-115	Ethical Debates Amer Politics
POLS-200	Law & Society
POLS-250	State & Local Politics
POLS-280	Artificial Intelligence and the Political Good
POLS-300	Rhetoric & Political Deliberation
POLS-305	Political Parties and Voting
POLS-310	The Congress
POLS-315	The Presidency
POLS-340	Medicine, Morality, and Law
POLS-345	Politics and Public Policy
POLS-355	Political Leadership
POLS-425	Constitutional Law
POLS-430	Constitutional Rights and Liberties
POLS-435	American Political Thought
POLS-460	Classical Constitutionalism, Virtue & Law
POLS-465	Modern Constitutionalism, Liberty & Equality
POLS-481	Women in Politics
POLS-485	Politics Through Fiction
POLS-490	Politics Through Film
POLS-525	Special Topics in Political Science

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Political Science, BS degree/ Sustainable Systems MS, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
POLS-110	American Politics	3
POLS-120	Introduction to International Relations	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective	3
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – Elective	3
	Political Science Elective	3
Second Year		
POLS-290	Politics and the Life Sciences	3
POLS-295	Cyberpolitics	3
	Political Science Electives	6
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Natural Science Inquiry Perspective‡	3
	General Education – Immersion 1, 2	6
	Open Elective	3
Third Year		
	Political Science Track Courses	6
	Political Science Electives	6
	Open Electives	6
	General Education – Immersion 3	3
	General Education – Electives	9
Fourth Year		
POLS-530	Political Science Capstone (WI-PR)	3
	Political Science Track Course	3
	Political Science Electives	6
	General Education – Electives	12
	Open Electives	6
Fifth Year		
Choose two of the following:		6
ISUS-702	Fundamentals of Sustainable Systems	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose two of the following:		6
ISUS-107	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy, and Sustainability	
Choose one of the following:		6
ISUS-780	Graduate Sustainability Capstone	
ISUS-790	Thesis	
	Graduate Sustainability Elective	6
Total Semester Credit Hours		**144**

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, science, foreign language, and history

Appropriate associate degree programs for transfer

Liberal arts with social sciences, sciences, or languages

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Psychology, BS

www.rit.edu/study/psychology-bs
Lisa Monette,
585-475-4137, lxmgla@rit.edu

Program overview

Psychology is the scientific study of the brain and focuses on observing, experimenting, and analyzing the behavior in multiple situations. To answer questions about what drives behavior, psychologists observe evolutionary factors, social and cultural inputs, and biological aspects of behavior.

RIT's psychology BS provides you with a strong grounding in the discipline of psychology, integrated with a technological focus. You will study behavior to understand the mind, but also look at the brain itself, with the use of new technologies allowing for a deeper study of psychological processes. Curriculum planning and career discussions occur with each student's faculty mentor.

Psychology Degree Plan of Study

The psychology bs is unique and encompasses four key elements: a choice of upper-level interdisciplinary tracks, a solid grounding in experimental methodology and statistics, the capstone sequence of courses, and a required cooperative education, internship, or research experience.

Interdisciplinary Tracks

Current research and technology are integrated into these tracks to produce a focused and career-oriented major in psychology. The tracks represent active fields of research in psychology, and you will receive an education that provides a strong foundation for graduate school and employment in related fields.

Choose two of the following interdisciplinary tracks:

- biopsychology
- clinical psychology
- cognitive psychology
- social psychology
- visual perception

Career Opportunities

The unique requirements of the psychology BS ensure that you are well-prepared for advanced study in psychology or a related field, employment in industry or in human service agencies, or other career opportunities.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly capable students. This option provides a fast-track pathway to law school in which students earn a bachelor's degree and a Juris Doctorate degree in six years. In the 3+3 option, students may apply to the option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's psychology degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

BS Psychology/MS Experimental Psychology: In this combined accelerated degree students will develop a strong foundation in experimental methods that will prepare them to continue their studies in a doctoral program, or start a career as a data analyst, research associate, or lab director in academic, government, health care, or community setting. The master's degree offers both a thesis option and capstone option allowing students to tailor their studies to meet their unique interests and future career goals.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Students in the psychology degree are required to complete a cooperative education, internship, or research experience (see Research). This is normally completed during the summer after the junior year but can be done in any semester after the second year. The co-op experience is completed in a psychology-related field.

Curriculum

Psychology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
PSYC-101	Introduction to Psychology	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
	Open Elective	3
	Psychology Breadth Course	3
	Psychology Pre-track Course	3
Second Year		
BIOG-101	Explorations in Cellular Biology and Evolution (General Education – Natural Science Inquiry Perspective)	3
BIOG-102	Explorations in Animal and Plant Anatomy and Physiology (General Education – Scientific Principles Perspective)	3
BIOG-103	Explorations in Cell Biology & Evolution Lab (General Education – Natural Science Inquiry Perspective)	1
BIOG-104	Explorations in Animal & Plant Anatomy & Physiology Lab (General Education – Scientific Principles Perspective)	1
PSYC-250	Research Methods I (WI-PR)	3
PSYC-251	Research Methods II (WI-PR)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
	Psychology Breadth Course	3
	Psychology Pre-track Courses	6
Third Year		
PSYC-301	Junior Seminar in Psychology	1
Choose one of the following:		0
PSYC-498	Internship (summer)	
PSYC-499	Psychology Co-op (summer)	
PSYC-550	Undergraduate Research Experience (summer)	
	General Education – Electives	9
	General Education – Immersions 1, 2, 3	9
	Psychology Breadth Course	3
	Psychology Track Courses	9
Fourth Year		
Choose two of the following:		6
PSYC-501	Senior Capstone Proposal	
PSYC-502	Seminar in Psychology	
PSYC-510	Senior Project in Psychology	
	General Education – Electives	9
	Open Electives	12
	Psychology Track Course	3
Total Semester Credit Hours		**124**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Pre-Track Courses

PSYC-221	Abnormal Psychology
PSYC-221H	Honors Abnormal Psychology
PSYC-222	Biopsychology
PSYC-223	Cognitive Psychology
PSYC-224	Perception
PSYC-224H	Honors Perception
PSYC-225	Social Psychology
PSYC-226	Developmental Psychology

Breadth Courses

PSYC-231	Death and Dying
PSYC-234	Industrial and Organizational Psychology
PSYC-235	Learning and Behavior
PSYC-236	Personality
PSYC-237	Psychology of Women
PSYC-238	Psychology of Religion
PSYC-239	Positive Psychology
PSYC-240	Human Sexuality
PSYC-241	Health Psychology

PSYC-242	Cultural Psychology
PSYC-300	Topics in Psychology
PSYC-313	Forensic Psychology

Tracks

Biopsychology

PSYC-410	Psychophysiology
PSYC-411	Psychopharmacology
PSYC-412	Biological Bases of Mental Disorders

Clinical Psychology

PSYC-420	Clinical Psychology
PSYC-421	Psychological Testing
PSYC-422	Psychotherapy

Cognitive Psychology

PSYC-430	Memory and Attention
PSYC-431	Language and Thought
PSYC-432	Decision Making, Judgment, and Problem Solving

Developmental Psychology

PSYC-460	Developmental Psychopathology
PSYC-461	Social and Emotional Development
PSYC-462	Cognitive and Perceptual Development

Social Psychology

PSYC-440	Interpersonal Relationships
PSYC-441	Group Processes
PSYC-442	Attitudes and Social Cognition

Visual Perception

PSYC-450	Visual System & Psychophysics
PSYC-451	Color, Form & Object Perception
PSYC-452	Depth, Motion & Space Perception

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Psychology, BS degree/Experimental Psychology (Thesis Track), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
PSYC-101	Introduction to Psychology	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
	Open Elective	3
	Psychology Breadth Course	3
	Psychology Pre-track Course	3
Second Year		
BIOG-101	Explorations in Cellular Biology and Evolution (General Education – Natural Science Inquiry Perspective)	3
BIOG-103	Explorations in Cell Biology & Evolution Lab General Education – Natural Science Inquiry Perspective	1
BIOG-102	Explorations in Animal and Plant Anatomy and Physiology (General Education – Scientific Principles Perspective)	3
BIOG-104	Explorations in Animal & Plant Anatomy & Physiology Lab General Education – Scientific Principles Perspective	1
PSYC-250	Research Methods I (WI-PR)	3
PSYC-251	Research Methods II (WI-PR)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
	Psychology Breadth Course	3
	Psychology Pre-track Courses	6
Third Year		
PSYC-301	Junior Seminar in Psychology	1
PSYC-501	Senior Capstone Proposal	3
Choose one of the following:		0
PSYC-498	Internship (summer)	
PSYC-499	Psychology Co-op (summer)	
PSYC-550	Undergraduate Research Experience (summer)	
	General Education – Electives	9
	General Education – Immersions 1, 2, 3	9
	Psychology Breadth Course	3
	Psychology Track Courses	6
Fourth Year		
PSYC-640	Graduate Statistics	3
PSYC-751	Graduate Research Seminar	0
Choose one of the following:		3
PSYC-752	Thesis Proposal	
	PSYC Graduate Program Elective (non-thesis track)	
	General Education – Electives	9
	Open Electives	12
	PSYC Graduate Program Elective	3
Fifth Year		
Choose one of the following:		3
PSYC-641	Applied Psychology Methods	
PSYC-642	Graduate Research Methods	
Choose one of the following:		3
PSYC-753	Thesis	
	PSYC Graduate Program Elective or Graduate Elective relevant to career goals (non-thesis track)	
	PSYC Graduate Program Electives	6
	Institute Electives	6
	PSYC Graduate Program Elective or Institute Elective	3
Total Semester Credit Hours		**145**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Psychology, BS degree/Experimental Psychology (Non- Thesis Track), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
PSYC-101	Introduction to Psychology	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
	Open Elective	3
	Psychology Breadth Course	3
	Psychology Pre-track Course	3
Second Year		
BIOG-101	Explorations in Cellular Biology and Evolution (General Education – Natural Science Inquiry Perspective)	3
BIOG-103	Explorations in Cell Biology & Evolution Lab General Education – Natural Science Inquiry Perspective	1
BIOG-102	Explorations in Animal and Plant Anatomy and Physiology (General Education – Scientific Principles Perspective)	3
BIOG-104	Explorations in Animal & Plant Anatomy & Physiology Lab General Education – Scientific Principles Perspective	1
PSYC-250	Research Methods I (WI)	3
PSYC-251	Research Methods II (WI)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
	Psychology Breadth Course	3
	Psychology Pre-track Courses	6
Third Year		
PSYC-301	Junior Seminar in Psychology	1
PSYC-501	Senior Capstone Proposal	3
Choose one of the following:		0
PSYC-498	Internship (summer)	
PSYC-499	Psychology Co-op (summer)	
PSYC-550	Undergraduate Research Experience (summer)	
	General Education – Electives	9
	General Education – Immersions 1, 2, 3	9
	Psychology Breadth Course	3
	Psychology Track Courses	6
Fourth Year		
PSYC-640	Graduate Statistics	3
PSYC-751	Graduate Research Seminar	0
	General Education – Electives	9
	Open Electives	12
	PSYC Graduate Program Elective	6
Fifth Year		
Choose one of the following:		3
PSYC-641	Applied Psychology Methods	
PSYC-642	Graduate Research Methods	3
PSYC-754	Graduate Psychology Capstone	3
	General Education - Elective	3
	PSYC Graduate Program Elective	9
Total Semester Credit Hours		**145**

Psychology, BS degree/Artificial Intelligence, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
PSYC-101	Introduction to Psychology	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Elective	6
	Psychology Breadth Course	3
	Psychology Pre-track Course	3
Second Year		
BIOG-101	Explorations in Cellular Biology and Evolution (General Education – Natural Science Inquiry Perspective)	3
BIOG-103	Explorations in Cell Biology & Evolution Lab (General Education – Natural Science Inquiry Perspective)	1
BIOG-102	Explorations in Animal and Plant Anatomy and Physiology (General Education – Scientific Principles Perspective)	3
BIOG-104	Explorations in Animal & Plant Anatomy & Physiology Lab (General Education – Scientific Principles Perspective)	1
PSYC-250	Research Methods I (WI-PR)	3
PSYC-251	Research Methods II (WI-PR)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
	Psychology Breadth Course	3
	Psychology Pre-track Courses	6
Third Year		
PSYC-301	Junior Seminar in Psychology	1
Choose one of the following:		0
PSYC-498	Internship (summer)	
PSYC-499	Psychology Co-op (summer)	
PSYC-550	Undergraduate Research Experience (summer)	
	General Education – Electives	9
	General Education – Immersions 1, 2	6
	Open Elective	3
	Psychology Breadth Course	3
	Psychology Track Courses	9
Fourth Year		
PSYC-640	Graduate Statistics	3
Choose one of the following:		3
PSYC-501	Senior Capstone Proposal	
PSYC-502	Seminar in Psychology	
PSYC-510	Senior Project in Psychology	
	General Education – Electives	6
	Open Electives	12
	Psychology Track Course	3
	General Education- Immersion	3
Fifth Year		
IDAI-710	Fundamentals of Machine Learning	3
IDAI-720	Research Methods for Artificial Intelligence	3
Choose one of the following:		3
IDAI-780	Capstone Project	
IDAI-790	Research & Thesis	
	AI Graduate Program Electives	9
Total Semester Credit Hours		**145**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses

Psychology, BS degree/Sustainable Systems, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
PSYC-101	Introduction to Psychology	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective A)	3
STAT-146	Introduction to Statistics II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
	Open Elective	3
	Psychology Breadth Course	3
	Psychology Pre-track Course	3
Second Year		
BIOG-101	Explorations in Cellular Biology and Evolution (General Education – Natural Science Inquiry Perspective)	3
BIOG-103	Explorations in Cell Biology & Evolution Lab (General Education – Natural Science Inquiry Perspective)	1
BIOG-102	Explorations in Animal and Plant Anatomy and Physiology (General Education – Scientific Principles Perspective)	3
BIOG-104	Explorations in Animal & Plant Anatomy & Physiology Lab (General Education – Scientific Principles Perspective)	1
PSYC-250	Research Methods I (WI-PR)	3
PSYC-251	Research Methods II (WI-PR)	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective†	3
	Psychology Breadth Course	3
	Psychology Pre-track Courses	6
Third Year		
PSYC-301	Junior Seminar in Psychology	1
Choose one of the following:		0
PSYC-498	Internship (summer)	
PSYC-499	Psychology Co-op (summer)	
PSYC-550	Undergraduate Research Experience (summer)	
	General Education – Electives	9
	General Education – Immersions 1, 2, 3	9
	Psychology Breadth Course	3
	Psychology Track Courses	9
Fourth Year		
Choose two of the following:		6
PSYC-501	Senior Capstone Proposal	
PSYC-502	Seminar in Psychology	
PSYC-510	Senior Project in Psychology	
Choose one of the following MS core courses:		3
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose one of the following MS core courses:		3
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy, and Sustainability (or approved substitute)	
	Psychology Track Course	3
	General Education – Electives	9
	Open Electives	6
Fifth Year		
Choose two of the following MS core courses:		6
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose two of the following MS core courses:		6
ISUS-704	Industrial Ecology	
ISUS-806	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy, and Sustainability (or approved substitute)	
Choose one of the following:		6
ISUS-780	Capstone	
ISUS-790	Thesis	
	Approved MS Sustainability Electives	6
Total Semester Credit Hours		**148**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† In preparation for graduate success, students are strongly encouraged to fulfill this requirement with one of the following courses: MATH-161 Applied Calculus, MATH-171 Calculus A, or MATH-181 Project Based Calculus I.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, social sciences

Appropriate associate degree programs for transfer

Liberal arts with science or social science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Sociology and Anthropology, BS

www.rit.edu/study/sociology-and-anthropology-bs
Lisa Monette,
585-475-4137, lxmgla@rit.edu

Program overview

With a deep commitment to the broader values of justice and human rights, the sociology and anthropology degree focuses on understanding social and cultural complexity and diversity. The program examines critical issues such as the economy, politics, gender and sexuality, race and ethnicity, urban living, the family, and health as they are shaped by social forces and cultural values. You'll gain insight from a wide range of theoretical perspectives and you'll develop the necessary research skills to further examine topics of critical importance in society. Students in the sociology and anthropology program build a strong foundation to pursue a wide range of career options both in the United States and abroad.

A sociology major paired with an anthropology major, this degree is the best of both, dedicated to understanding and appreciating social and cultural complexity and diversity across the globe and through time. Students are exposed to critical perspectives, theories, and research skills that are necessary to engage in complex global and local issues that crosscut the economy, politics, society, gender, ethnicity, and culture. Understanding societies both past and present better prepares us to face the challenges of a rapidly changing world and to assume positions of leadership that promote vision and equity.

Plan of Study

This integrated, multidisciplinary sociology and anthropology degree explores the common scholarly roots and creative differences of sociology and anthropology, through which students gain a synergistic set of perspectives and skills that prepare them for social analysis in the widest array of social and cultural settings. Students choose one of the following specializations: archaeology, cultural anthropology, sociology, or thematic.

Graduates pursue careers in medicine and public health, law, business, international development, the not-for-profit sector, urban planning, architecture, social work, education, and government, among other possibilities.

RIT's Pre-Law Program

Law schools welcome applications from students majoring in a wide range of academic programs. RIT's pre-law program will help you navigate the admission process for law school, explore a range of legal careers, and guide you through course selection to ensure you build the skills and competencies required of competitive law school applicants. The program is open to students in all majors who are interested in pursuing a career in law.

RIT/Syracuse University College of Law 3+3 Option

RIT has partnered with Syracuse University's College of Law to offer an accelerated 3+3 BS/JD option for highly capable students. This option provides a fast-track pathway to law school in which students earn a bachelor's degree and a Juris Doctorate degree in six years. In the 3+3 option, students may apply to the option directly. Successful applicants are offered admission to RIT and given conditional acceptance into Syracuse University's College of Law.

RIT's sociology and anthropology degree is one of the approved majors for the 3+3 option. Learn more about the RIT/Syracuse University College of Law 3+3 Option, including admission requirements and frequently asked questions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops take your knowledge and turn it into know-how. A liberal arts co-op provides hands-on experience that enables you to apply your knowledge in professional settings while you make valuable connections between course work and real-world applications.

Students in the sociology and anthropology degree are required to complete one cooperative education experience.

Additional Hands-On Learning Opportunities

In addition to a required cooperative education experience, students may apply their classroom knowledge with opportunities for hands-on learning through archaeological, ethnographic, or linguistic fieldwork, laboratory analysis, and study abroad.

Curriculum

Sociology and Anthropology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
ANTH-102	Cultural Anthropology	
ANTH-102H	Honors Cultural Anthropology	
ANTH-103	Archaeology and the Human Past	
Choose one of the following:		3
SOCI-102	Foundations of Sociology	
SOCI-102H	Honors Sociology	
UWRT-150	First-Year Writing: FYW: Writing Seminar (WI) (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Mathematical Perspective A	3
	General Education – Natural Science Inquiry Perspective†	3
	Track Course	3
	Open Elective	3
Second Year		
	General Education – Elective	3
	General Education – Immersion 1	3
	General Education – Mathematical Perspective B	3
	General Education – Scientific Principles Perspective	3
	General Education – Social Perspective	3
	SOCANT Methods Course	3
	Track Courses	9
	Open Elective	3
Third Year		
Choose one of the following:		3
ANTH-301	Social and Cultural Theory	
SOCI-301	Social and Cultural Theory	
	General Education – Electives	6
	General Education – Immersion 2, 3	6
	Track Courses	9
	SOCANT Methods Course	3
	Open Elective	3
Fourth Year		
Choose one of the following:		3
ANTH-501	Senior Research Project	
ANTH-502	Scholar's Thesis I	
SOCI-501	Senior Research Project	
SOCI-502	Scholar's Thesis I	
	General Education – Electives	15
	Open Electives	12
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, students must take both the lecture and lab portions to satisfy the requirement. The lecture section alone will not fulfill the requirement.

Methods Courses

Electives–Choose two of the following	
ANTH-215	Field Methods in Archaeology
ANTH-244	Human Centered Design Queries: An Anthropological Approach
ANTH-302/SOCI-302	Qualitative Research
ANTH-303/SOCI-303	Statistics in the Social Sciences
ANTH-361/SOCI-361	Sociology of Numbers
ANTH-385	Anthropology and History

Tracks

Archaeology

Electives–Choose seven of the following	
ANTH-103	Archaeology and the Human Past
ANTH-215	Field Methods in Archaeology
ANTH-230	Buried Treasure: Archaeology in Popular Culture
ANTH-250	Themes in Archaeological Research
ANTH-255	Regional Archaeology
ANTH-260	Native North Americans
ANTH-303	Statistics in the Social Sciences
ANTH-312	People Before Cities
ANTH-328	Heritage and Tourism
ANTH-360	Humans and Their Environment
ANTH-375	Native American Sovereignty, Culture, and Resources
ANTH-415	Archaeological Science
ANTH-420	Exploring Ancient Technology
ANTH-435	The Archaeology of Death
ANTH-489	Topics in Anthropology
ANTH-498	Practicum
ANTH-503	Scholar's Thesis II
ENVS-250	Applications Geographic Information Systems
SOCI-303	Statistics in the Social Sciences

Cultural Anthropology

Electives–Choose seven of the following	
ANTH-102	Cultural Anthropology
ANTH-104	Language and Linguistics
ANTH-105	Health, Humans, and Technology
ANTH-210	Culture and Globalization
ANTH-220	Language and Culture: Introduction to Linguistic Anthropology
ANTH-235	Immigration to the U.S.
ANTH-244	Human-Centered Design Queries: An Anthropological Approach
ANTH-245	Ritual and Performance
ANTH-246	Gender and Health
ANTH-260	Native North Americans
ANTH-265	Native Americans in Film
ANTH-270	Cuisine, Culture, and Power
ANTH-295	Global Public Health
ANTH-302	Qualitative Research
ANTH-303	Statistics in the Social Sciences
ANTH-310	African Film
ANTH-325	Bodies and Culture
ANTH-328	Heritage and Tourism
ANTH-335	Culture and Politics in Latin America
ANTH-341	Global Addictions
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-375	Native American Sovereignty, Culture, and Resources
ANTH-385	Anthropology and History
ANTH-410	Global Cities
ANTH-425	Global Sexualities
ANTH-430	Visual Anthropology
ANTH-489	Topics in Anthropology
ANTH-498	Practicum
ANTH-503	Scholar's Thesis II
INGS-101	Global Studies
INGS-270	Cuisine, Culture, and Power
SOCI-246	Gender and Health
SOCI-295	Global Public Health
SOCI-302	Qualitative Research
SOCI-303	Statistics in the Social Sciences
SOCI-361	Sociology of Numbers

Sociology

Electives–Choose seven of the following	
ANTH-246	Gender and Health
ANTH-295	Global Public Health
ANTH-302	Qualitative Research
ANTH-303	Statistics in the Social Sciences
ANTH-361	Sociology of Numbers
SOCI-210	Black America: Culture & HipHop
SOCI-215	The Changing Family
SOCI-220	Minority Group Relations
SOCI-225	Social Inequality
SOCI-230	Sociology of Work
SOCI-235	Women, Work, and Culture
SOCI-240	Deaf Culture in America
SOCI-246	Gender and Health

SOCI-295	Global Public Health
SOCI-300	Sociology of American Life
SOCI-302	Qualitative Research
SOCI-303	Statistics in the Social Sciences
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-322	Health and Society
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
SOCI-361	Sociology of Numbers
SOCI-395	Borders: Humans, Boundaries, and Empires
SOCI-489	Topics in Sociology
SOCI-498	Practicum
SOCI-503	Scholar's Thesis II

Sociocultural Inquiry

Electives–Choose seven of the following	
ANTH-102	Cultural Anthropology
ANTH-103	Archaeology and the Human Past
ANTH-104	Language and Linguistics
ANTH-105	Humans, Health, Technology
ANTH-210	Culture and Globalization
ANTH-215	Field Methods in Archaeology
ANTH-220	Language and Culture: Introduction to Linguistic Anthropology
ANTH-230	Buried Treasure: Archaeology in Popular Culture
ANTH-235	Immigration to the U.S.
ANTH-244	Human Centered Design Queries: An Anthropological Approach
ANTH-245	Ritual and Performance
ANTH-246	Gender and Health
ANTH-250	Themes in Archaeological Research
ANTH-255	Regional Archaeology
ANTH-260	Native North Americans
ANTH-265	Native Americans in Film
ANTH-270	Cuisine, Culture and Power
ANTH-295	Global Public Health
ANTH-302	Qualitative Research
ANTH-303	Statistics in the Social Sciences
ANTH-310	African Film
ANTH-312	People Before Cities
ANTH-325	Bodies and Culture
ANTH-328	Heritage and Tourism
ANTH-335	Culture and Politics in Latin America
ANTH-341	Global Addictions
ANTH-345	Genocide and Transitional Justice
ANTH-360	Humans and Their Environment
ANTH-361	Sociology of Numbers
ANTH-375	Native American Cultural Resources and Rights
ANTH-385	Anthropology and History
ANTH-410	Global Cities
ANTH-415	Archaeological Science
ANTH-420	Exploring Ancient Technology
ANTH-425	Global Sexualities
ANTH-430	Visual Anthropology
ANTH-435	The Archaeology of Death
ANTH-489	Topics in Anthropology
ANTH-498	Practicum
ANTH-503	Scholar's Thesis II
ENVS-250	Applications Geographic Information Systems
INGS-101	Global Studies
INGS-270	Cuisine, Culture, and Power
SOCI-210	Black America: Culture & HipHop
SOCI-215	The Changing Family
SOCI-220	Minority Group Relations
SOCI-225	Social Inequality
SOCI-230	Sociology of Work
SOCI-235	Women, Work, and Culture
SOCI-240	Deaf Culture in America
SOCI-246	Gender and Health
SOCI-295	Global Public Health
SOCI-300	Sociology of American Life
SOCI-302	Qualitative Research
SOCI-303	Statistics in the Social Sciences
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-322	Health and Society
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
SOCI-361	Sociology of Numbers
SOCI-395	Borders: Humans, Boundaries, and Empires
SOCI-489	Topics in Sociology
SOCI-498	Practicum
SOCI-503	Scholar's Thesis II

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Sociology and Anthropology, BS degree/Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
ANTH-102	Cultural Anthropology	
ANTH-102H	Honors Cultural Anthropology	
ANTH-103	Archaeology and the Human Past	
Choose one of the following:		3
SOCI-102	Foundations of Sociology	
SOCI-102H	Honors Sociology	
	General Education – First-Year Writing	3
YOPS-10	RIT 365: RIT Connections	0
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Global Perspective	3
	General Education - Natural Science Inquiry Perspective†	3
STAT-145	Introduction to Statistics I (General Education - Mathematical Perspective A)	3
	SOCANT Track Course	3
	Open Elective	3
Second Year		
	SOCANT Methods	6
	Track Courses	9
	General Education - Social Perspective	3
	General Education - Scientific Principles Perspective	3
	General Education - Mathematical Perspective B	3
	General Education - Immersion 1	3
	General Education - Elective	3
Third Year		
Choose one of the following:		3
ANTH-301	Social and Cultural Theory	
SOCI-301	Social and Cultural Theory	
	Track Courses	9
	General Education - Immersion 2, 3	6
	General Education - Electives	6
	Open Elective	6
Fourth Year		
Choose one of the following:		3
ANTH-501	Senior Research Project	
SOCI-501	Senior Research Project	
ANTH-502	Scholar's Thesis I	
SOCI-502	Scholar's Thesis I	
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
	General Education - Electives	15
	Open Elective	6
Fifth Year		
PUBL-700	Readings in Public Policy	3
PUBL-703	Program Evaluation and Research Design	3
Choose one of the following:		3
PUBL-610	Technological Innovation and Public Policy	
STSO-710	Graduate Science and Technology Policy Seminar	
	Graduate Electives	9
Choose one of the following:		6
PUBL-785	Capstone Research Experience	
PUBL-790	Public Policy Thesis	
	Two graduate electives plus PUBL-798 Comprehensive Exam	
PUBL-798	Comprehensive Exam	
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, student must take both the lecture and lab portions to satisfy the requirement.
‡ Students who choose to complete the comprehensive exam will take an additional two graduate electives.

Sociology and Anthropology, BS degree/ Communication, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
ANTH-102	Cultural Anthropology	
ANTH-103	Archaeology and the Human Past	
SOCI-102	Foundations of Sociology	3
UWRT-150	General Education – First-Year Writing: FYW: Writing Seminar (WI)	3
YOPS-10	RIT 365: RIT Connections	3
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Global Perspective	3
	General Education - Natural Science Inquiry Perspective†	3
	General Education - Mathematical Perspective A	3
	Open Elective	3
	SOCANT Track course	3
Second Year		
	SOCANT Track Courses	9
	SOCANT Methods Course	3
	General Education - Social Perspective	3
	General Education - Scientific Principles Perspective	3
	General Education - Mathematical Perspective B	3
	General Education - Immersion 1	3
	General Education - Elective	3
	Open Elective	3
Third Year		
Choose one of the following:		3
ANTH-301	Social and Cultural Theory	
SOCI-301	Social and Cultural Theory	
	SOCANT Track Courses	9
	SOCANT Methods Courses	3
	General Education - Immersion 2, 3	6
	General Education - Electives	6
	Open Elective	3
Fourth Year		
Choose one of the following:		3
ANTH-501	Senior Research Project	
ANTH-502	Scholar's Thesis I	
SOCI-501	Senior Research Project	
SOCI-502	Scholar's Thesis I	
COMM-714	Strategic Communication	3
	Communication Elective	3
	General Education - Electives	15
	Open Elective	6
Fifth Year		
COMM-702	Communication Theories	3
COMM-703	Research Methods in Communication	3
COMM-720	Thesis Preparation Seminar	0
COMM-800	Communication Thesis/Project	6
	Communication Elective	3
	Professional Core	9
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, student must take both the lecture and lab portions to satisfy the requirement.

Sociology and Anthropology, BS degree/Hospitality Business Management, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
ANTH-102	Cultural Anthropology	
ANTH-102H	Honors Cultural Anthropology	
ANTH-103	Archaeology and the Human Past	
Choose one of the following:		3
SOCI-102	Foundations of Sociology	
SOCI-102H	Honors Sociology	
YOPS-10	RIT 365: RIT Connections	0
	General Education- First Year Writing (WI-GE)	3
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Global Perspective	3
	General Education - Natural Science Inquiry Perspective†	3
	General Education - Mathematical Perspective A	3
	SOCANT Track Course	3
	Open Elective	3
Second Year		
	SOCANT Track Courses‡	9
	SOCANT Methods Course	3
	General Education - Social Perspective	3
	General Education - Scientific Principles Perspective	3
	General Education - Mathematical Perspective B	3
	General Education - Immersion 1	3
	General Education - Elective	3
	Open Elective	3
Third Year		
Choose one of the following:		3
ANTH-301	Social and Cultural Theory	
SOCI-301	Social and Cultural Theory	
	SOCANT Track Courses	9
	SOCANT Methods Course	3
	General Education - Immersion 2, 3	6
	General Education - Electives	6
	Open Elective§	3
Fourth Year		
Choose one of the following:		3
ANTH-501	Senior Research Project (WI-PR)	
ANTH-502	Scholar's Thesis I (WI-PR)	
SOCI-501	Senior Research Project (WI-PR)	
SOCI-502	Scholar's Thesis I (WI-PR)	
HSPT-735	Hospitality and Tourism Customer Experience and Engagement	3
HSPT-745	Advanced Lodging Operations	3
	General Education - Electives	15
	Open Elective§	6
Fifth Year		
HSPT-755	Advanced Food & Beverage Business Management	3
HSPT-760	Hospitality Asset Management	3
HSPT-780	Hospitality Analytics	3
HSPT-797	Capstone Project in Hospitality and Tourism	3
	MS Professional Electives	12
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, student must take both the lecture and lab portions to satisfy the requirement.
‡ In preparation for graduate success, students are strongly encouraged to take ANTH-328 Heritage and Tourism and ANTH-270 Cuisine, Culture, and Power among their track electives.
§ In preparation for graduate success, students are strongly encouraged to take HSPT-225 Hospitality and Tourism Management Fundamentals among their open electives in their third or fourth year.
** Note: SOCI/ANTH 498 Practicum and SOCI/ANTH 499 Co-op (0 credits) are encouraged but not required.

MS Professional Electives

Students take 12 credits of graduate-level elective courses, approved by department faculty on a case-by-case basis as appropriate to student preparation and trends in the field, as a part of individual plans of study. Sorted by category, such elective courses may include:

Accounting & Finance

Electives	
ACCT-603	Accounting for Decision Makers
ACCT-745	Accounting Information and Analytics
FINC-605	Financing New Ventures
FINC-721	Financial Analysis for Managers

Data Analytics

Electives	
BANA-680	Data Management for Business Analytics
BANA-780	Advanced Business Analytics
MGIS-650	Introduction to Data Analytics and Business Intelligence

Human Resources

Electives	
HRDE-726	Technology and the Future of Work
HRDE-735	Leading Human Resources
HRDE-742	Leading Change
HRDE-765	Diversity in the Global Workplace

Management

Electives	
DECS-744	Project Management
ISEE-682	Lean Six Sigma Fundamentals
MGMT-740	Leading Teams in Organizations

Marketing

Electives	
MKTG-761	Marketing Concepts and Commercialization
MKTG-768	Marketing Analytics
MKTG-772	Internet Marketing: Strategy & Tactics

Sociology and Anthropology, BS degree/Sustainable Systems, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
ANTH-102	Cultural Anthropology	
ANTH-102H	Honors Cultural Anthropology	
ANTH-103	Archaeology and the Human Past	
Choose one of the following:		3
SOCI-102	Foundations of Sociology	
SOCI-102H	Honors Sociology	
YOPS-10	RIT 365: RIT Connections	0
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Global Perspective	3
	General Education - Natural Science Inquiry Perspective†	3
	General Education - Mathematical Perspective A‡	3
	General Education - First Year Writing	3
	SOCANT Track Course	3
	Open Elective	3
Second Year		
	Method Courses	3
	Track Courses	9
	General Education - Social Perspective	3
	General Education - Scientific Principles Perspective	3
	General Education - Mathematical Perspective B§	3
	General Education - Immersion 1	3
	General Education - Elective	3
	Open Elective	3
Third Year		
Choose one of the following:		3
ANTH-301	Social and Cultural Theory	
SOCI-301	Social and Cultural Theory	
	Method Courses	3
	Track Courses	9
	General Education - Immersion 2, 3	6
	General Education - Electives	6
	Open Elective	3
Fourth Year		
Choose one of the following:		3
ANTH-501	Senior Research Project (WI-PR)	
ANTH-502	Scholar's Thesis I (WI-PR)	
SOCI-501	Senior Research Project (WI-PR)	
SOCI-502	Scholar's Thesis I (WI-PR)	
Choose one of the following:		3
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose one of the following:		3
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy and Sustainability (or approved substitute)	
	General Education - Electives	15
	Open Elective	6
Fifth Year		
Choose two of the following:		6
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose two of the following:		6
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy and Sustainability (or approved substitute)	
Choose one of the following:		6
ISUS-780	Capstone	
ISUS-790	Thesis	
	Approved MS Sustainability Electives	6
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either a 3- or 4-credit hour lab science course. If a science course consists of separate lecture and laboratory sections, student must take both the lecture and lab portions to satisfy the requirement.
‡ In preparation for graduate success, students are strongly encouraged to fulfill this requirement with one of the following courses: STAT-145 Introduction to Statistics I, STAT-146 Introduction to Statistics II, or STAT-205 Applied Statistics.
§ In preparation for graduate success, students are strongly encouraged to fulfill this requirement with one of the following courses: MATH-161 Applied Calculus, MATH-171 Calculus A, or MATH-181 Project-Based Calculus I.
** Note: SOCI/ANTH 498 Practicum and SOCI/ANTH 499 Co-op (0 credits) are encouraged but not required.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social studies and/or history with a strong performance is expected.
- 3 years of math is required and must include algebra, geometry, and algebra 2/trigonometry.
- 2-3 years of science.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, and math

Appropriate associate degree programs for transfer

Liberal arts, environmental studies, economics, government, science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Women's, Gender, and Sexuality Studies, BS

www.rit.edu/study/womens-gender-and-sexuality-studies-bs

Silvia Benso, Professor
585-475-4116, sxbgsl@rit.edu

Program overview

What is Gender Studies for a 21st Century World?

Gender studies is an interdisciplinary field of inquiry that intersects gender and sexuality with race, class, ethnicity, localities, disabilities, and age. By analyzing the functioning of gender and sexual norms, stereotypes, and representations as they appear within and across cultures in literature, history, the law, public health and health care institutions, educational systems, the arts, sciences, technologies, and other areas, we come to understand the impact of gendered attitudes and behaviors on the ongoing oppression, discrimination, and exclusion of women and other sexed and gendered groups in various contexts of today's society, locally and globally. Learning to recognize and understand structures of power relations and sources of oppression and injustice leads to acknowledging the need for social change and transformation at various levels of existence, from social interactions to relations with the Earth and the environment, to modes of scientific knowledge and technical production and applications.

Gender studies fosters a critical approach to identifying problems, expanding intellectual inquiry, imagining creative solutions, and building an open, diverse, inclusive, and collaborative environment that leads to innovation, progress, and positive change for a better, more responsible, and more sustainable world.

In RIT's women's, gender, and sexuality studies major, you will ask key questions, such as:

- In what ways are our lived experiences and social and cultural institutions structured through the intersections of gender, sexuality, race, class, ethnicity, locality, disabilities, and age?
- How and why do systems of power, oppression, and privilege create gender and sexual norms, stereotypes, and discrimination in personal, social, and professional life?
- How can a focus on gender work to transform, enhance, and possibly reimagine scientific standards, models of knowledge production as well as technology and engineering projects, designs, and applications?
- How does gender diversity advance potential, heighten creativity, and broaden perspectives?
- By understanding the impact of sex- and gender-based discrimination and attitudes, how can we improve our personal life, social environments, workplaces, families, and communities?
- As gender dynamics intersect with race, ethnicity, class, localities, disability, and age, what can we do to remove obstacles and create spaces for personal and collective growth, equal opportunities, fair access to resources, and new possibilities?

As you investigate these questions and some possible answers, you will begin to develop a strong understanding of how the ideals of diversity, inclusivity, empathy, equity, and social justice can lead to positive, productive, supportive workplaces and a more welcoming and just society. As you make your way through aspects of feminist theories, women's studies, gender and sexuality studies, queer theories, and transgender studies, and apply these to various areas of human experience and production, you will develop a deep and broad understanding of topics pertaining to differences, diversities, and inclusiveness. You will also realize the need for professionals who know how to be skilled and informed leaders, advocates, activists, and managers of community-engagement and social transformations.

Women's, Gender, and Sexuality Studies Courses

The women's, gender, and sexuality studies major advances the values and benefits of sexual and gender diversity, equity, and representation; intellectual, personal, and professional empowerment; collaborative relations, empathy, and caring; and social, economic, and environmental justice and responsibility. It provides you with the skills and tools to help create–in any workplace and living environment–a diverse, equitable, inclusive, sustainable, supportive, and fulfilling place for everyone involved.

In this major, you develop transferable skills in:

- Critical thinking
- Problem solving
- Inquisitive attitude
- Appreciative inquiry
- Creative imagination
- Active listening
- Expressive communication
- Inclusive leadership
- Collaborative team-building
- Gender and social justice advocacy

This dynamic approach, paired with a wide variety of courses taught by faculty across RIT's colleges, is adaptable to a range of fields of study, career paths, and professional environments–from the arts, media, and design; to science, engineering, and technology; to business, communication, and entrepreneurship; and to health care, public policy, and the social sciences.

Core and area courses: Core and area courses explore gender diversity, intersectionality, multicultural and transnational perspectives, and the connections between personal and social, local and global systems, institutions, and communities. The courses will help you build broad, first-hand knowledge of the field of women's, gender, and sexuality studies and of the gendered social and cultural dynamics that shape our world at large.

Concentrations: You will customize your course work by choosing one of six concentrations to further develop your knowledge and expertise in a particular area of women's studies, gender studies, queer and transgender studies, LGBTQ+ studies, or sexuality studies that best aligns with your goals and interests. Concentrations are available in:

- Gender, art, and media
- Gender and STEM studies
- Gender equity, social institutions, and public affairs
- Gender advocacy, community activism, and inclusive leadership
- Queer and transgender studies
- Women's and gender studies

Professional and technical courses: You will also complete a set of professional or technical courses that focus on an area of professional interest. These courses may be chosen from any RIT discipline. Some topics that may prove particularly beneficial to women's, gender, and sexuality studies students include the following: criminal justice; 3D studio art; business; cybersecurity; entrepreneurship; game design; management; nutritional sciences; photography; sports, events, and entertainment management; water resources; international and global studies; and more.

And, if you seek to champion racial or cultural diversity and equity as they intersect with women, gender, and sexuality, this major can be enriched with a minor or immersion in:

- African Studies Immersion
- American Indian and Indigenous Studies Immersion
- American Indian and Indigenous Studies Minor
- American Sign Language and Deaf Cultural Studies Immersion
- American Sign Language and Deaf Cultural Studies Minor
- Black Studies Immersion
- Black Studies Minor
- Deaf Leadership Immersion
- Deaf Leadership Minor
- Diversity, Inclusion, and Dialogue Immersion
- Diversity, Inclusion, and Dialogue Minor
- Diversity in the U.S. Immersion
- Latino/Latina/Latin American Studies Immersion
- Latino/Latina/Latin American Studies Minor
- Modern Languages and Cultures Immersion in Arabic, Chinese, French, German, Italian, Japanese, Portuguese, Russian, or Spanish

Graduates of the women's, gender, and sexuality studies major will be skilled at navigating workplace and societal challenges and become trailblazers for progress in industries as diverse as engineering, law, computing, environmental safety, sustainability, business leadership, human services, health care, and more.

Hands-On Experience

The women's, gender, and sexuality studies major provides additional opportunities to gain real-world experience. Students are encouraged to take advantage of:

- Study abroad: Examine the beliefs and practices of other cultures and their attitudes toward women and other marginalized people.
- Cooperative education and internships: Gain hands-on career experience with an organization dedicated to advancing women's, gender, and LGBTQ+ rights and freedoms.
- Research experiences: Work directly with a faculty member to explore a topic in gender studies, women's studies, queer studies, and more.

Curriculum

Women's, Gender, and Sexuality Studies, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
WGST-200	Foundations of WGST (General Education- Social Perspective)	
WGST-210	Introduction to LGBTQ+ Studies (General Education- Social Perspective)	
WGST-205	Feminist Practices of Inquiry (General Education- Ethical Perspective)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Elective	6
	General Education - Mathematical Perspective A	3
	General Education - Mathematical Perspective B	3
	Open Elective	3
	WGSS Area	6
Second Year		
WGST-300	Feminist Leadership, Gender Equity, and Empowerment	3
WGST-305	Feminist Activism for Gender Justice	3
	General Education – Global Perspective	3
	General Education – Immersion 1,2	6
	General Education – Artistic Perspective	3
	Open Elective	3
	Professional Elective	9
Third Year		
WGST-399	Collaborative Learning Seminar in WGSS (WI-PR)	3
	General Education – Immersion 3	3
	General Education – Scientific Principles Perspective	3
	General Education – Natural Science Inquiry Perspective	3
	General Education – Elective	9
	Professional Elective	3
	WGSS Applied Concentration	3
	WGSS Area	3
Fourth Year		
Choose one of the following:		3
WGST-499	Cooperative Education in WGSS and one WGST course	
WGST-596	Internship in WGSS	
WGST-597	Advanced Research in WGSS	
WGST-598	Advanced Project in WGSS	
	General Education - Elective	6
	Open Elective	12
	Professional Elective	3
	WGSS Applied Concentration	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

WGSS Area Courses

Students choose 1 course in THREE distinct areas.

Area One: Positionality Courses

WGST-200	Foundations of Women and Gender Studies*
WGST-206	Queer Looks
WGST-210	Introduction to LGBTQ+ Studies*
WGST-230	Men, Males, and Masculinities
WGST-237	Psychology of Women
WGST-240	Human Sexuality
WGST-245	Prostitution and Vice
WGST-246	History of Women in Science and Engineering
WGST-250	Domestic Violence
WGST-255	Seminar on Sexual Violence
WGST-265	Women and Crime
WGST-282	Women, Gender, and Computing
WGST-290	American Women and Gender History
WGST-309	Feminist Theory
WGST-330	Performing Identity in Popular Media
WGST-335	Women and the Deaf Community
WGST-342	Gender, Science, and Technology
WGST-351	Gender and Sexuality in Hispanic Studies
WGST-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
WGST-361	Queering Gender
WGST-383	Traumatic Images
WGST-384	Art of Dying
WGST-388	Gender and Contemporary Art
WGST-392	Queer and Transgender Creative Writing Workshop
WGST-414	Women and Gender in Literature and Media
WGST-449	Topics in Women's and Gender Studies†
WGST-451	Economics of Women and the Family
WGST-459	Topics in LGBTQ+ Studies †
WGST-481	Women in Politics

Area Two: Intersectionality Courses

WGST-200	Foundations of Women and Gender Studies*
WGST-206	Queer Looks
WGST-210	Introduction to LGBTQ+ Studies*
WGST-230	Men, Males, and Masculinities
WGST-235	Women, Work, and Culture
WGST-246	History of Women in Science and Engineering
WGST-250	Domestic Violence
WGST-255	Seminar on Sexual Violence
WGST-265	Women and Crime
WGST-282	Women, Gender, and Computing
WGST-290	American Women and Gender History
WGST-309	Feminist Theory
WGST-318	Philosophies of Love, Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-335	Women and the Deaf Community
WGST-342	Gender, Science, and Technology
WGST-351	Gender and Sexuality in Hispanic Studies
WGST-357	Communication, Gender, and Media
WGST-361	Queering Gender
WGST-383	Traumatic Images
WGST-388	Gender and Contemporary Art
WGST-392	Queer & Transgender Creative Writing Workshop
WGST-414	Women and Gender in Literature and Media
WGST-449	Topics in Women's and Gender Studies †
WGST-459	Topics in LGBTQ+ Studies †

Area Three: Inter/Trans-nationalism and Multiculturalism Courses

WGST-235	Women, Work, and Culture
WGST-351	Gender and Sexuality in Hispanic Studies
WGST-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
WGST-449	Topics in Women's and Gender Studies †
WGST-459	Topics in LGBTQ+ Studies †
ANTH-325	Bodies and Culture
ANTH-425	Global Sexualities

Area Four: Activism and Advocacy Courses

WGST-245	Prostitution and Vice
WGST-250	Domestic Violence
WGST-255	Seminar on Sexual Violence
WGST-265	Women and Crime
WGST-309	Femenist Theory
WGST-318	Philosophies of Love, Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-335	Women and the Deaf Community
WGST-357	Communication, Gender, and Media
WGST-361	Queering Gender
WGST-388	Gender and Contemporary Art
WGST-392	Queer and Transgender Creative Writing Workshop
WGST-449	Topics in Women's and Gender Studies†
WGST-459	Topics in LGBTQ+ Studies†
COMM-291	Communication for Social Change
LEAD-102	Inclusive Leadership
MEDS-355	Introduction to Global Health
NDLS-200	Introduction to Group Advocacy
PUBL-101	Foundations of Public Policy
SOCI-246	Gender and Health
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
STSO-230	Foundations of Engagement and Community Transformation

WGSS Applied Concentrations

Students select three (3) courses in ONE of the following applied concentrations.

Concentration One: Gender, Art, and Media

WGST-206	Queer Looks
WGST-318	Philosophies of Love, Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-351	Gender & Sexuality in Hispanic Studies
WGST-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
WGST-357	Communication, Gender, and Media
WGST-383	Traumatic Images
WGST-384	Art of Dying
WGST-388	Gender and Contemporary Art
WGST-392	Queer and Transgender Creative Writing Workshop
WGST-414	Women and Gender in Literature and Media
WGST-449	Topics in Women's and Gender Studies†
WGST-459	Topics in LGBTQ+ Studies †
ANTH-325	Bodies and Culture
ARTH-577	Displaying Gender
GRDE-322	Women Pioneers in Design
SOCI-355	CyberActivism: Diversity, Sex, and the Internet

Concentration Two: Gender and STEM Studies

WGST-246	History of Women in Science and Engineering
WGST-282	Women, Gender, and Computing
WGST-342	Gender, Science, and Technology
WGST-357	Communication, Gender, and Media
WGST-449	Topics in Women's and Gender Studies†
WGST-459	Topics in LGBTQ+ Studies†
SOCI-246	Gender and Health
ANTH-246	Gender and Health
SOCI-335	CyberActivism: Diversity, Sex, and the Internet

Concentration Three: Gender Equity, Social Institutions, and Public Affairs

WGST-230	Men, Males, and Masculinities
WGST-235	Women, Work, and Culture
WGST-245	Prostitution and Vice
WGST-250	Domestic Violence
WGST-255	Seminar on Sexual Violence
WGST-265	Women and Crime
WGST-290	American Women's and Gender History
WGST-318	Philosophies of Love, Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-335	Women and the Deaf Community
WGST-357	Communication, Gender, and Media
WGST-361	Queering Gender
WGST-449	Topics in WGST†
WGST-451	Economics of Women and the Family
WGST-459	Topics in LGBTQ+ Studies†
WGST-481	Women in Politics
SOCI-246	Gender and Health
ANTH-246	Gender and Health

Concentration Four: Gender Advocacy, Community Activism, and Inclusive Leadership

WGST-392	Queer and Transgender Creative Writing Workshop
WGST-449	Topics in Women's and Gender Studies†
WGST-459	Topics in LGBTQ+ Studies†
COMM-291	Communication for Social Change
LEAD-102	Inclusive Leadership
NDLS-200	Introduction to Group Advocacy
PUBL-101	Foundations of Public Policy
STSO-230	Foundations of Engagement and Community Transformation

Concentration Five: Queer and Transgender Studies

WGST-206	Queer Looks
WGST-210	Introduction to LGBTQ+ Studies*
WGST-240	Human Sexuality
WGST-318	Philosophies of Love, Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-351	Gender and Sexuality in Hispanic Studies
WGST-361	Queering Gender
WGST-392	Queer and Transgender Creative Writing Workshop
WGST-459	Topics in LGBTQ+ Studies

Concentration Six: Individualized WGSS

WGST-XXX	Any WGST course not used elsewhere in the major

* May be used if course was not used for the WGSS Core
† Depending on the topic

Faculty

Dean's Office

Kelly Norris Martin, BA, John Carroll University; MS, Ph.D., North Carolina State University—Interim Dean; Professor

Kirsten Condry, BA, Swarthmore College; Ph.D., University of Minnesota—Interim Associate Dean; Associate Professor

Lauren Hall, BA, State University of New York at Binghamton; MA, Ph.D., Northern Illinois University—Associate Dean; Professor

John S. Smithgall, BA, Roberts Wesleyan College; MS, University of Rochester—Assistant Dean for Student Services

School of Communication

Tracy R. Worrell, BA, Otterbein College; MA, University of Cincinnati; Ph.D., Michigan State University— Director, School of Communication; Professor

Bruce A. Austin, BA, Rider College; MS, Illinois State University; Ph.D., Temple University—Professor

Keri Barone, BA, MA, State University College at Brockport—Undergraduate Program Director, Communication; Principal Lecturer

Donathan Brown, BA, Illinois College; MA, Syracuse University; Ph.D., Texas A&M University—Assistant Provost and AVP for Faculty Diversity and Recruitment; Associate Professor

Claudia Bucciferro, BA, MA, University of Concepcion (Chile); Ph.D.,University of Colorado at Boulder—Assistant Professor

Kari Cameron, BS, M.Ed., Nazareth College of Rochester; MS, Rochester Institute of Technology—Undergraduate Program Director, Advertising and Public Relations; Principal Lecturer

Grant C. Cos, BA, University of Massachusetts at Amherst; MA, Emerson College; Ph.D., Kent State University—Professor

Rebecca DeRoo, BA, Bryn Mawr College; MA, Ph.D., University of Chicago—Director, Visual Culture Program; Professor

Thomas Dooley, BA, State University of New York at Geneseo; MA, University of Bolton (United Kingdom)—Lecturer

Nickesia Gordon, BA, University of the West Indies (Jamaica); MA, Clark University; Ph.D., Howard University—Associate Professor

Keith B. Jenkins, BA, University of Arkansas; MA, Ph.D., Florida State University—Vice President and Associate Provost for Diversity and Inclusion; Professor

Eun Sook Kwan, BA, Hannam University (Korea); MA, University of Texas at Austin; Ph.D., University of Georgia—Graduate Program Director; Associate Professor

Kelly Norris Martin, BA, John Carroll University; MS, Ph.D., North Carolina State University—Interim Dean; Professor

Hinda Mandell, BA, Brandeis University; MA, Harvard University; Ph.D., Syracuse University—Undergraduate Program Director, Journalism; Professor

Julie Napieralski, BS, Kent State University; MS, Syracuse University—Senior Lecturer

David R. Neumann, BA, Ithaca College; MA, Ph.D., Bowling Green State University—Professor

Rachel (Xiaoyue) Peng, BLA, Northwest Agriculture and Forest University (China); MA, University of Electronic Science and Technology of China (China); Ph.D., Pennsylvania State University—Assistant Professor

Elizabeth Reeves O'Connor, BS, MS, Rochester Institute of Technology—Principal Lecturer

Katrina Overby, BA, Rust College; MS, Oklahoma State University; Ph.D., Indiana University, Bloomington—Assistant Professor

Jonathan E. Schroeder, BA, University of Michigan; MA, Ph.D., University of California at Berkeley—William A. Kern Professor in Communications

Ryan Yang Wang, LLB, School of International Relations (China); MA, University of Texas at Austin; Ph.D., Pennsylvania State University—Assistant Professor

Xiao Wang, BA, Beijing University of Aeronautics and Astronautics (China); MA, Marquette University; Ph.D., Florida State University—Professor

Criminal Justice

Christopher Schreck, BA, University of Florida; MA, University of Arizona; Ph.D., Pennsylvania State University—Department Chair; Professor

Irshad Altheimer, BA, Alabama State University; MA, Ph.D., Washington State University—Professor

John McCluskey, BA, MA, Ph.D., State University of New York at Albany—Professor

LaVerne McQuiller Williams, BS, Rochester Institute of Technology; JD, Albany Law School of Union University; MA, Buffalo State College; Ph.D., University at Buffalo—Professor; Associate Provost for Faculty Affairs

Judy Porter, BA, University of Northern Colorado; MA, New Mexico State University; Ph.D., University of Nebraska at Omaha—Undergraduate Program Director: Criminal Justice; Professor

Divya Ramjee, BA, The Ohio State University; MS, Johns Hopkins University; Ph.D., American University—Assistant Professor

O. Nicholas Robertson, BA, State University College at Geneseo; MA, State University College at Brockport; Ph.D., State University of New York at Buffalo—Associate Professor

Jason Scott, BS, Roberts Wesleyan College; MA, Ph.D., State University of New York at Albany—Graduate Program Director; Associate Professor

Tony Smith, BA, MA, Ph.D., State University of New York at Albany—Associate Professor

Joe Williams, BS, Rochester Institute of Technology; MA, State University College at Brockport—Field Experience Coordinator; Principal Lecturer

Economics

Bharat Bhole, BA, MA, University of Mumbai (India); Ph.D., University of Southern California—Department Chair; Associate Professor

Javier Espinosa, BS, Miami University; MA, Ph.D., University of Maryland at College Park—Department Chair; Associate Professor

Amit Batabyal, BS, Cornell University; MS, University of Minnesota; Ph.D., University of California at Berkeley—Arthur J. Gosnell Professor in Economics

Javier Espinosa, BS, Miami University; MA, Ph.D., University of Maryland at College Park—Associate Professor

Bridget Gleeson Hanna, BComm, National University College Galway (Ireland); MA, University College at Dublin (Ireland); MA, University of Wisconsin at Madison—Undergraduate Program Director; Associate Professor

Priti Kalsi, BA, University of Maryland at College Park; MA, Ph.D., University of Colorado Boulder—Assistant Professor

Nikolaus Kasimatis, BA, MA, Ph.D., Simon Fraser University—Associate Professor

Eumni Ko, BA, BS, MA, Seoul National University (South Korea); MA, Ph.D., University of Rochester—Assistant Professor

Eddery Lam, BA, MA, Boston University; MA, University of Massachusetts at Amherst; Ph.D., Kansas State University—Associate Professor

Jeannette C. Mitchell, BA, Westminster College; Ph.D., University of Utah—Associate Professor

Selhan Sahin, BSc., Middle East Technical University (Turkey); ABD, Virginia Polytechnic Institute and State University—Senior Lecturer

M. Jeffrey Wagner, AB, University of Missouri; MS, Ph.D., University of Illinois at Urbana-Champaign—Professor

Yiwei Wang, BS, Fudan University (China); MS, University of Michigan; Ph.D., Cornell University—Lecturer

English

Sean Grass, BA, Bucknell University; MA, Ph.D., Penn State University—Department Chair; Professor

A.J. Caschetta, BA, Nazareth College of Rochester; MA, University of Missouri; Ph.D., New York University—Principal Lecturer

Robert Glick, BA, University of California at Berkeley; MA, San Francisco State University; Ph.D., University of Utah— Undergraduate Program Director; Associate Professor

Trent Hergenrader, BA, University of Wisconsin-Madison; MA, Ph.D., University of Wisconsin-Milwaukee—Associate Professor

Lisa M. Hermsen, BA, Briar Cliff University; MA, University of Missouri at Columbia; MA, Ph.D., Iowa State University—Professor

Julie Johannes, BA, State University College at Geneseo; MA, University of Rochester—Principal Lecturer

Katherine Mayberry, BA, Smith College; MA, Ph.D., University of Rochester—Professor

David S. Martins, BA, St. Olaf College; MA, Northern Arizona University; Ph.D., Michigan Technological University—Associate Professor

Danielle Pafunda, BA, Bard College; MFA, The New School; Ph.D., University of Georgia—Assistant Professor

Emily T. Prud'hommeaux, AB, Harvard College; MA, University of California; Ph.D., Oregon Health & Science University—Assistant Professor

Amit Ray, BA, State University of New York at Buffalo; MA, Ph.D., University of Michigan—Associate Professor

Anne M. Royston, BA, Williams College; MA, Ph.D., University of Utah—Associate Professor

Laura Shackelford, BA, University of Minnesota-Minneapolis; MA, Ph.D. Indiana University—Director, Center for Engaged Storycraft; Professor

Whitney Sperrazza, BA, State University of New York at Albany; MA, University of Chicago; Ph.D., Indiana University Bloomington—Assistant Professor

Elena Rakhimova-Sommers, BA, MA, Moscow State Pedagogical University (Russia); MA, University of Notre Dame; Ph.D., University of Rochester—Provost's Faculty Associate for Non-Tenure-Track Faculty; Principal Lecturer

Thomas M. Stone, BA, Northern Arizona University; MA, Bucknell University; Ph.D., University of Rochester—Lecturer

Karen vanMeenen, BA, Binghamton University; CAPF, International Federation for Biblio/ Poetry Therapy; MA, Vermont College; MA, The New School; ABD, Ph.D., The European Graduate School (Switzerland)—Principal Lecturer

Leia Wilson, BA Truman State University; MA, University of Alabama Tuscaloosa; Ph.D., University of Nevada Las Vegas—Assistant Professor

School of Performing Arts

Erica Haskell, BA, Mills College; MA, Ph.D., Brown University—Director, School of Performing Arts; Professor

Jonathan Kruger, BA, Carthage College; MM, DMA, Eastman School of Music—Professor

Mike Frank, BA, Santa Clara University; MFA, Rochester Institute of Technology—Lecturer

Elizabeth Goins, BA, University of Delaware; Ph.D., University of London—Associate Professor

Andy Head, BS, Bradley University; MFA, Michigan State University—Assistant Professor

Kelley Holley, BA, Emerson College; MA, San Diego State University; Ph.D., University of Maryland—Assistant Professor

Joel Hunt, BM, State University College at Fredonia; MA, Ph.D., University of California, Santa Barbara—Visiting Assistant Professor

Jessica Lieberman, BA, University of Pennsylvania; Ph.D., University of Michigan—Director, Digital Humanities and Social Sciences; Associate Professor

Yunn-Shan Ma, BM, MS, National Taiwan Normal University (China); DMA, Eastman School of Music—Assistant Professor

David McCarthy, BM, MA, Eastman School of Music; MM, Houghton College—Visiting Lecturer

Michael E. Ruhling, BA, Goshen College; MA, University of Notre Dame; MM, University of Missouri; Ph.D., Catholic University of America—Professor

Alexa Scott-Flaherty, BA, Vassar College—Visiting Lecturer

Karl Stabnau, BA, Lafayette College; BM, Eastman School of Music; MA, MM, Syracuse University—Visiting Lecturer

Ryan Underbakke, BA, University of Minnesota; MFA, London School of Performing Arts via Naropa University—Visiting Assistant Professor

Modern Languages and Cultures

Sara Scott Armengot, BA, Oberlin College; MA, Ph.D., Pennsylvania State University—Department Chair; Undergraduate Program Director, Spanish; Associate Professor

Philippe Chavasse, BA, MA, Université Lyon 2 (France); Ph.D., University of Oregon—Undergraduate Program Director, French; Associate Professor

Zhong Chen, BA, Nanjing Normal University (China); MA, Ph.D., Cornell University—Undergraduate Program Director, Chinese; Associate Professor

Elisabetta D'Amanda, BA, State University of New York; MA, Nazareth College of Rochester; Ph.D., Middlebury College—Principal Lecturer

Diane J. Forbes, BA, State University College at Geneseo; MA, Ph.D., Pennsylvania State University—Professor

Yuhan Huang, BA, Beijing Foreign Studies University (China); MA, Ph.D., Purdue University—Assistant Professor

Kévin Le Blévec, BA, License, MA, M.Ed., Université de Rennes 2 (France)—Modern Language Technology Specialist; Senior Lecturer

Yukiko Maru, BA, Keio University (Japan); MA, MS, University of Illinois at Urbana-Champaign—Principal Lecturer

Godys Armengot Mejía, BA, Pennsylvania State University; M.Ed., University of Maryland—Senior Lecturer

Masako Murakami, BA, Portland State University; MA, The Ohio State University—Principal Lecturer

Ulrike Stroszeck, BA, University of Akron; MA, Auburn University; Ph.D., University of North Carolina at Chapel Hill—Principal Lecturer

Mihoko Wakabayashi, MD, Fukushima Medical College—Visiting Lecturer

Hiroko Yamashita, BA, University of Southern Mississippi; MA, Ph.D., The Ohio State University—Undergraduate Program Director, Japanese; Professor

History

Tamar W. Carroll, BA, University of Massachusetts; MA, Ph.D., University of Michigan—Department Chair, Professor

Michael Brown, BS, Cornell University; M.Sc., London School of Economics and Political Science (United Kingdom); Ph.D., University of Rochester—Associate Professor

Juilee Decker, BA, Wittenberg University; MA, University of Illinois Urbana Champaign; Ph.D., Case Western Reserve University—Director, Museum Studies; Professor

Rebecca A. R. Edwards, BA, College of the Holy Cross; Ph.D., University of Rochester—Professor

Joseph M. Henning, BA, Colorado College; MIA, Columbia University; Ph.D., American University—Undergraduate Program Director, History; Associate Professor

Michael Laver, BA, Purdue University; MA, Ph.D., University of Pennsylvania—Professor

Samaya Nasr, BS, MS, ALBA–University of Balamand (Lebanon); MA, Syracuse University—Lecturer

Richard Newman, BA, State University of New York at Buffalo; MA, Brown University; Ph.D., State University of New York at Buffalo—Professor

James S. Rankine, BA, University of Queensland (Australia); MA, Ph.D., University of Rochester—Visiting Lecturer

Rebecca Scales, BA, Hollins College; MA, University of Georgia; Ph.D., Rutgers University—Associate Professor

Corinna Schlombs, Diploma, Bielefeld University (Germany); MA, Ph.D., University of Pennsylvania—Associate Professor

Philosophy

Brian Schroeder, BA, Edinboro College; M.Div., Princeton Theological Seminary; MA, Ph.D., Stony Brook University—Department Chair; Professor

Jesús Aguilar, BA, Hampshire College and Universidad Veracruzana (Mexico); MA, Universidad Nacional Autónoma de México (Mexico); Ph.D., McGill University (Canada)—Professor

Silvia Benso, Laurea, University of Torino (Italy); MA, Ph.D., Pennsylvania State University—Director, Women's and Gender Studies Program; Professor

Evelyn Brister, BA, Austin College; Ph.D., Northwestern University—Undergraduate Program Director; Professor

John Capps, BA, St. John's College; MA, Ph.D., Northwestern University—Professor

Colin Mathers, BA, DePauw University; MA, Ph.D., University of Rochester—Lecturer

Irina Mikhalevich, BA, University of California at Berkley; Ph.D., Boston University—Assistant Professor

Wade L. Robison, BA, University of Maryland; Ph.D., University of Wisconsin—Ezra A. Hale Professor in Applied Ethics

John T. Sanders, BA, Purdue University; MA, Ph.D., Boston University—Professor

Evan Selinger, BA, Binghamton University; MA, University of Memphis; Ph.D., Stony Brook University—Professor

Katie Terezakis, BA, Central Connecticut State University and Heidelberg University (Germany); MA, Ph.D., New School for Social Research—Professor

Lawrence G. Torcello, BA, State University College at Brockport; MA, Ph.D., State University of New York at Buffalo—Associate Professor

Political Science

Dongryul Kim, BA, MA, Seoul University (South Korea); Ph.D., University of Virginia—Interim Chair; Associate Professor

Nathan M. Dinneen, BA, MA, University of North Texas; Ph.D., Northern Illinois University—Undergraduate Program Director; Associate Professor

Benjamin R. Banta, BA, Purdue University; MA, Ph.D., University of Delaware—Undergraduate Program Director; Associate Professor

Sarah Burns, BA, University of Toronto (Canada); MA, Ph.D., Claremont Graduate University—Associate Professor

Michelle Chun, BA, Harvard University; JD, Ph.D., Columbia University—Assistant Professor

Joseph Fornieri, BA, State University College at Geneseo; MA, Boston College; Ph.D., Catholic University of America—Professor

Lauren Hall, BA, State University of New York at Binghamton; MA, Ph.D., Northern Illinois University—Associate Dean; Professor

Dongryul Kim, BA, MA, Seoul University (South Korea); Ph.D., University of Virginia—Program Director, International and Global Studies; Associate Professor

Gabriel Alves Pimenta, BS, Pontifical Catholic University of Rio de Janeiro (Brazil); MS, Brazilian School of Public and Business Administration (Brazil); MA, Ph.D., University of California Riverside—Visiting Assistant Professor

Stephen Sims, BA, Thomas Aquinas College; MA, Ph.D., Baylor University—Assistant Professor

Sean Sutton, B.Econ., University of Queensland (Australia); MA, Ph.D., University of Dallas—Professor

Psychology

Joseph S. Baschnagel, BA, MA, Ph.D., State University of New York at Buffalo—Department Chair; Associate Professor

Suzanne Bamonto, AA, Finger Lakes Community College; BA, State University College at Geneseo; Ph.D., University of Oregon—Associate Professor

A. Eleanor Chand-Matzke, BA, State University College at Geneseo; MA, The New School for Social Research; Ph.D., University of Massachusetts—Lecturer

Jessamy Comer, BA, Baylor University; MA, Ph.D., University of Rochester—Lecturer

Kirsten Condry, BA, Swarthmore College; Ph.D., University of Minnesota—Interim Associate Dean; Associate Professor

Caroline M. DeLong, BA, New College of Florida; MA, Ph.D., University of Hawaii—Undergraduate Program Director; Professor

John E. Edlund, BS, MA, Ph.D., Northern Illinois University—Professor

Allison Fitch, BA, University of Connecticut; Ph.D., University of Massachusetts Boston—Assistant Professor

Dustin Haraden, BA, University of Denver; MA, Ph.D., University of Illinois at Urbana-Champaign—Assistant Professor

Stephanie A. Godleski, BA, Hamilton College; MA, Ph.D., University of Buffalo—Associate Professor

Andrew M. Herbert, BS, McGill University (Canada); MA, Ph.D., University of Western Ontario (Canada)—Professor

Rebecca Houston, BS, University of Arkansas at Little Rock; MA, Ph.D., University of New Orleans, Louisiana—Associate Professor

Cecilia Ovesdotter Alm, BA, Universitat Wien (Austria); MA, Ph.D., University of Illinois—Professor

Marjorie Prokosch, BA, Florida State University; MS, Ph.D., Texas Christian University—Assistant Professor

Esa M. Rantanen, BS, MS, Embry-Riddle Aeronautical University; MS, Ph.D., Pennsylvania State University—Associate Professor

Lillia Rissman, BA, Brandeis University; Ph.D., Johns Hopkins University—Assistant Professor

Lindsay Schenkel, BA, St. John Fisher College; MA, Ph.D., University of Nebraska at Lincoln—Associate Professor

Alan Smerbeck, BA, University of Rochester; Ph.D., State University of New York at Buffalo—Associate Professor

Tina Sutton, BS, Union College; MA, Ph.D., State University of New York at Albany—Graduate Program Director, Experimental Psychology; Associate Professor

Public Policy

Sandra Rothenberg, BS, Syracuse University; MS, Ph.D., Massachusetts Institute of Technology—Department Chair; Professor

Eric Hittinger, BS, MS, Case Western Reserve University; Ph.D., Carnegie Mellon University—Graduate Program Director; Associate Professor

Eunju Kang, BA, Ewha Women's University (Korea); MA, University of California Los Angeles; Ph.D., Claremont Graduate University—Senior Lecturer

Qing Miao, BA, Nanjing University (China); MS, University of Michigan; Ph.D., Syracuse University—Assistant Professor

Science, Technology, and Society

Christine Keiner, BA, Western Maryland College; Ph.D., Johns Hopkins University—Department Chair; Professor

Deborah Blizzard, BA, Smith College; MS, Ph.D., Rensselaer Polytechnic Institute—Professor

M. Ann Howard, BS, Cornell University; JD, Rutgers University—Professor

Jessica W. Pardee, BA, MA, Ph.D., Tulane University—Associate Professor

Raymond Scattone, BA, University of Delaware; MA, Johns Hopkins University; Ph.D., University of Delaware—Lecturer

Kaitlin Stack Whitney, BS, Cornell University; Ph.D., University of Wisconsin-Madison—Assistant Professor

Kristoffer J. Whitney, BS, Rochester Institute of Technology; Ph.D., University of Pennsylvania—Associate Professor

Sociology and Anthropology

Robert C. Ulin, BA, Whittier College; MA, Ph.D., New School for Social Research—Undergraduate Program Director; Professor

Uli Linke, BA, Macalester College; MA, Ph.D., University of California at Berkeley—Department Chair; Professor

Brian P. Barry, BA, St. John Fisher College; MS, Ph.D., Syracuse University—Associate Professor

Makini Beck, BA, State University College at Old Westbury; MSED, St. Bonaventure University; Ph.D., University of Rochester—Assistant Professor

Jeffrey Burnette, BA, State University of Albany; MA, Ph.D., State University of New York at Buffalo—Associate Professor

Conerly Casey, BA, University of Vermont; MS, University of Southern California; Ph.D., University of California at Los Angeles—Associate Professor

Kijana Crawford, BA, Tougaloo College; MSW, Atlanta University; MA, Ed.D., University of Rochester—Professor

Ellen Granberg, BA, University of California, Davis; MA, Ph.D., Vanderbilt University—Provost; Professor

Jessica Hardin, BA, Fordham University; MA, Ph.D., Brandeis University—Director, International and Global Studies; Associate Professor

Anthony Jimenez, BA, MA, The University of Texas at El Paso; Ph.D., University of Minnesota—Assistant Professor

Kristin Kant-Byers, BA, Maryville College; MA, Temple University; Ph.D., University of Kentucky Lexington—Visiting Lecturer

Christine Kray, BA, New Mexico State University; Ph.D., University of Pennsylvania—Professor

Wenji Liao, BS, China Foreign Affairs University (China); MS, Ph.D., University of Minnesota—Associate Professor

David C. Meiggs, BA, University of Colorado at Boulder; MS, Ph.D., University of Wisconsin at Madison—Associate Professor

William D. Middleton, BA, University of California at San Diego; MA, San Francisco State University; Ph.D., University of Wisconsin at Madison—Associate Professor

Vincent Serravallo, BA, State University College at Oswego; MA, University of Kansas; Ph.D., City University of New York Graduate Center—Associate Professor

Distinguished Professorships

Caroline Werner Gannett Professorship in the Humanities

Established: 1974

Donor: Mrs. Frank E. Gannett

Purpose: To perpetuate Mrs. Gannett's lifelong interest in education, especially in those fields of study that have a humanistic perspective

Held by: Open

Arthur J. Gosnell Professorship in Economics

Established: 1985

Donor: Family and friends of Arthur J. Gosnell

Purpose: To perpetuate the memory of Arthur J. Gosnell through recognition of the importance of good teaching in economics and by facilitating research into public policy questions

Held by: Amit Batabyal

Ezra A. Hale Professorship in Applied Ethics

Established: 1989

Donors: William B. and Patricia F. Hale and Lawyers Cooperative Publishing Company

Purpose: To establish a permanent memorial to a long-time and valued friend of RIT, Ezra A. Hale, and to provide instruction in applied ethics in keeping with his beliefs in sportsman-like conduct, fair play and honesty

Held by: Wade L. Robison

William A. Kern Professorship in Communication

Established: 1971

Donor: Rochester Telephone Corporation

Purpose: To commemorate the 100th anniversary of that company and to provide a memorial for a former president of the company and a man who served as an RIT trustee from 1959 to 1964

Held by: Jonathan E. Schroeder

Barber B. Conable Jr. Professorship in International Studies

Established: 2004

Donor: The Starr Foundation

Purpose: To honor the late statesman and former World Bank President and ensure that Barber Conable's legacy of principled and innovative leadership in the national and international arenas will be preserved for all time.

Held by: Jessica Hardin

National Technical Institute for the Deaf

Gerard Buckley, President, NTID; Vice President and Dean, RIT
www.rit.edu/ntid

Programs of Study

Online degree available

The National Technical Institute for the Deaf (NTID), one of RIT's nine colleges, provides deaf and hard-of-hearing students with career-focused educational programs and also prepares deaf, hard-of-hearing, and hearing professionals for work in fields related to deafness. RIT/NTID serves more than 1,100 deaf and hard-of-hearing students from across the United States and the world. The college offers the most accessible educational community in the world, including faculty and staff who specialize in educating deaf and hard-of-hearing students, and a rich environment where students can fit in, feel comfortable, pursue their dreams, and fulfill their potential.

NTID offers more than 20 accredited associate and bachelor's degree programs that lead to employment. Deaf and hard-of-hearing students can earn an associate degree that readies them for technical careers in a diverse set of fields. At the bachelor's level, NTID prepares students in programs dedicated to community development and inclusive leadership and, separately, to American Sign Language-English interpretation. Qualified deaf and hard-of-hearing students can also earn bachelor's, master's, or doctoral degrees in professional programs offered by RIT's eight mainstream colleges and two degree-granting units: Art and Design, Business, Computing and Information Sciences, Engineering, Engineering Technology, Health Sciences and Technology, Liberal Arts, Science, the School of Individualized Study, and the Golisano Institute for Sustainability.

In support of its national mission, NTID has research, teaching, and learning activities that focus on understanding and enhancing the educational, social, and communication opportunities for deaf and hard-of-hearing individuals. NTID provides services and programs that enhance teaching and learning within the NTID community and beyond via broad-based research activities and dissemination strategies, curriculum development, instructional design and evaluation, and instructional media services.

Over the past five years, 95 percent of deaf and hard-of-hearing graduates who chose to enter the workforce have found employment.

NTID's academic programs

NTID provides student-oriented academic programming to ensure a rich, coherent set of educational experiences for students. NTID offers Associate+Bachelor's degree programs and career-focused associate degrees as well as general education course work in a variety of disciplines.

Bachelor's Degrees: NTID offers two bachelor of science (BS) programs. The BS in community development and inclusive leadership is an innovative, interdisciplinary program in which students gain the skills needed by dynamic leaders. The BS in ASL-English interpretation major prepares sign language interpreters for work in settings where deaf, hard-of-hearing, and hearing people interact and communicate.

Associate+Bachelor's Degree Programs: NTID offers Associate+Bachelor's degree and pre-baccalaureate programs. Associate in science (AS) degrees in applied computer technology, applied liberal arts, business, and general science provide a transition

to baccalaureate programs in the colleges of Art and Design, Business, Computing and Information Sciences, Health Sciences and Technology, Liberal Arts, Science, and the School of Individualized Study. In addition, several of our associate in applied science (AAS) degree programs, such as 3D graphics technology, accounting technology, administrative support technology, applied mechanical technology, business administration, civil technology, laboratory science technology, and mobile application development provide students with the necessary skills to enroll in other RIT colleges. Pre-baccalaureate studies programs are designed to prepare qualified students for several specific bachelor's degree programs in other colleges of RIT.

Career-Focused Programs: Numerous career-focused options and concentrations, designed to lead directly to employment, are available within the following areas: 3D graphics technology, accounting technology, administrative support technology, applied computer technology, architectural and civil drafting technology, business administration, business technology, design and imaging technology, laboratory science technology, mobile application development, and precision manufacturing technology. Laboratories are equipped with the latest technology and maintain a curriculum that represents current industry trends and requirements, based on routine feedback from business and industry advisory groups. These programs lead to the associate in applied science degree and the associate in occupational studies degree. All career-focused programs require one cooperative education experience, typically a minimum of 350 hours scheduled over a 10-week period.

General Education: NTID offers an array of general education courses to a broad-based population of students, including those who are undecided about, or underprepared for, matriculation into a program. In addition, NTID provides a comprehensive sign language education program for students, faculty, and staff members..

Educational opportunities through NTID

Bachelor's Degree Programs

Bachelor of science degree (BS) programs offered by NTID require the completion of 120-123 semester credit hours of course work that includes 60 credits of general education courses, 12 credits of open electives, and at least 48 credits of major-specific courses.

Associate+Bachelor's Degree Programs

Associate+Bachelor's degree programs offered through NTID prepare qualified students to enroll in baccalaureate degree programs in the college of NTID as well as in the other colleges of RIT.

Associate in science degree (AS) and selected associate in applied science degrees (AAS): Certification at this level requires the completion of 30-31 semester credit hours of technical course work, 30-32 semester credit hours in general education courses and other courses as appropriate to the degree. The majority of courses are offered through the other colleges of RIT. These degrees prepare students to enter and complete bachelor's degree programs in the colleges of Art and Design, Business, Computing and Information Sciences, Health Sciences and Technology, Liberal Arts, Science, and the School of Individualized Study.

Pre-baccalaureate studies: The pre-baccalaureate studies programs are available as a bridge to baccalaureate degree programs for students who are accepted by NTID and are close to, but not fully ready for, direct entry into a baccalaureate-level program. Pre-baccalaureate programs are offered through the engineering studies, liberal studies, science and mathematics, and visual communications studies departments. The career exploration studies program is available to students who are undecided as to their program of study.

Pre-baccalaureate studies programs are appropriate for students who need to further develop mathematics, English, or discipline-related skills. This academic option is flexible and individualized and enables students to focus on needed skills while they progress toward their chosen field of study. Students take courses taught by NTID instructional/support faculty along with entry-level courses taught in other RIT colleges.

Career-focused programs

Career-focused programs offered through NTID lead to the associate in applied science degree or the associate in occupational studies degree. These programs permit students to enter their careers directly.

Associate in applied science degree (AAS): Certification at this level requires 48-52 semester credit hours of technical instruction. In addition, students must complete 24 semester credit hours in general education courses as well as other required semester credit hours determined by the program of study. In some programs, this degree prepares students to apply for entry to bachelor's degree programs in other colleges of RIT.

Associate in occupational studies degree (AOS): Certification at this level requires 45-52 semester credit hours of technical instruction. In addition to satisfactorily completing technical courses, students must complete 15 semester credit hours in the NTID general education curriculum, as well as other required semester credit hours determined by the program of study.

Career Exploration Studies

The Career Exploration Studies program offers opportunities for students to collect information about NTID majors and career paths before deciding on a program of study. It also assists students who need additional academic preparation and study in order to be ready for their chosen major.

A counselor/academic advisor is assigned to help students evaluate the information and make career decisions. Students can remain in the Career Exploration Studies program for up to two academic semesters.

Support and access services

For students who take courses at NTID, faculty members will communicate directly with them using a variety of communication strategies, which may include sign language with voice, sign language without voice, spoken language (FM systems are available), fingerspelling, printed/visual aids, web-based instructional materials, and individual tutoring.

In cases where classroom communication strategies do not appropriately meet a student's needs, students can request access services from the Department of Access Services for courses at NTID via the myaccess.rit.edu website.

Students taking NTID courses will have access to a state-of-the-art learning center staffed by professional and peer tutors. Assigned counselors will work closely with students to help them plan their collegiate experience and provide them with personal, social, career, and academic advising and counseling services.

Educational opportunities in other RIT college

In addition to NTID's programs, qualified deaf and hard-of-hearing students may enroll as degree students in one of the more than 200 professional programs offered through RIT's other colleges and degree-granting entities: College of Art and Design, Saunders College of Business, Golisano College of Computing and Information Sciences, Kate Gleason College of Engineering, College of Engineering Technology, College of Health Sciences and Technology, College of Liberal Arts, School of Individualized Study, College of Science, and Golisano Institute for Sustainability. NTID students also may take classes in the other RIT colleges individually, on a course-by-course basis.

Deaf and hard-of-hearing students who wish to enroll in a program in another RIT college must meet that college's admission requirements. Furthermore, deaf and hard-of-hearing students supported by NTID also must meet NTID admission requirements, submit an audiological record completed by a certified audiologist

CAREER-FOCUSED AND ASSOCIATE+BACHELOR'S DEGREE PROGRAMS OF NTID		RELATED EDUCATIONAL PROGRAMS OF OTHER RIT COLLEGES		
Leading to associate degrees		Leading to bachelor's degrees in the other RIT colleges.		
NTID PROGRAMS	**OTHER RIT COLLEGES**	**OTHER RIT PROGRAMS**		
3D Graphics Technology	College of Art and Design	**School of Design** • 3D Digital Design		
Accounting Technology	School of Individualized Study	• Indvidualized Program		
Administrative Support Technology	School of Individualized Study	• Indvidualized Program		
Applied Computer Technology Concentrations: • PC Technical Support • Networking and Cyber Security	College of Computing and Information Sciences	• Computer Science • Computing and Information Technologies • Computing Security	• Game Design and Development • Human-Centered Computing • New Media Interactive Development	• Software Engineering • Web and Mobile Computing
Applied Liberal Arts	College of Liberal Arts	• Advertising and Public Relations • Criminal Justice • Communication • Economics • English • History	• Humanities, Computing, and Design • International and Global Studies • Journalism • Museum Studies	• Philosophy • Political Science • Psychology • Public Policy • Sociology and Anthropology
Applied Mechanical Technology	College of Engineering Technology	• Robotics and Manufacturing Engineering Technology	• Mechanical Engineering Technology	• Mechatronics Engineering Technology
Architectural and Civil Drafting Technology	College of Engineering Technology	• Civil Engineering Technology		
	College of Art and Design	• Industrial Design • Interior Design		
Business	College of Business	• Accounting • Finance • Hospitality and Tourism Management	• Global Business Management • Management Information Systems	• Marketing • Supply Chain Management
Business Administration	School of Individualized Study	• Individualized Program		
Business Technology Concentrations: • Accounting Technology • Administrative Support Technology				
Civil Technology	College of Engineering Technology	• Civil Engineering Technology		
Design and Imaging Technology Concentrations: • Digital Media • Graphic Design • Graphic Production	College of Art and Design, College of Engineering Technology	**School of Art** • Studio Arts • Illustration • Medical Illustration • Art Exploration **School of Design** • Graphic Design • Industrial Design • Interior Design	• New Media Design **School of Film and Animation** • Film and Animation • Motion Picture Science **Department of Graphic Media Science and Technology** • Print and Graphic Media Technology	**School of Photographic Arts and Sciences** • Photography and Imaging Arts • Photographic Sciences • Photographic Arts and Sciences Exploration
General Science	College of Health Science and Technology, College of Science	• Biomedical Sciences • Biology	• Biotechnolgy and Molecular Bioscience • Biochemistry	• Chemistry • Environmental Science
Laboratory Science Technology	College of Science, School of Individualized Study	• Individualized Program • Biochemistry • Biology	• Biotechnology and Molecular Bioscience • Chemistry	• Environmental Science
Mobile Application Development	College of Computing and Information Sciences	• Computer Science • Game Design and Development	• Human-Centered Computing • New Media Interactive Development	• Software Engineering • Web and Mobile Computing
Precision Manufacturing Technology	College of Engineering Technology	• Robotics and Manufacturing Engineering Technology		

Note: In addition to the Associate+Bachelor's degree and career-focused programs noted above, NTID also offers pre-baccalaureate studies. This program is available as a bridge for qualified students accepted by NTID and interested in enrolling in another RIT college but not yet ready to enter a baccalaureate-level program.

(CCC-A), and complete standard RIT admission forms. Please see the Admissions section for more information. Qualified students may choose to enroll in courses taught through the other colleges of RIT for several reasons: as part of the elective requirements in their NTID programs; to complete their programs of study at NTID, then continue their education at another RIT college; to enter a program of another RIT college directly from high school; or to enroll directly into a program in one of RIT's colleges from another postsecondary program.

Support and access services

If students qualify to take courses in other RIT colleges, RIT will provide the educational access services students need. Students can choose from among sign language interpreting services, FM systems, notetaking, or real-time captioning services. Alternative services also may be provided. Students also have access to a unique array of educational support services, including experienced faculty tutors, personal and career counseling, and academic advising. Academic advising services are provided by the student's home college.

First-Year Experiences Programming

NTID programs

Beginning with a summer pre-orientation program, NTID provides a special array of curricular and co-curricular activities to help maximize each student's potential for success in the first year. These experiences are designed to enhance students' bonding with the community while providing time and support to select and enter into a major and/or progress within a career program.

First-year and transfer students entering an NTID associate degree, associate+bachelor's degree, pre-baccalaureate, or career exploration studies program in the fall semester are required to participate in a summer orientation program called the Summer Vestibule Program (SVP). This program includes:

- placement testing in English and mathematics
- orientation/transition to college life activities
- career sampling
- advising and counseling
- application to a career-focused or Associate+Bachelor's degree program, career exploration studies, pre-baccalaureate studies, or baccalaureate program

This summer program is followed by additional first-year experiences that allow students to work to select courses and activities that meet individual goals and needs. Components of first-year experiences programming include:

- enrollment in the Freshman Seminar (NCAR-010) during the first semester; this course helps students identify personal, social, and academic skills that lead to a successful college experience
- completion of preparatory courses, as needed
- work with an Counselor/Academic Advisor (CAA)
- participation in career exploration and introductory courses, when and if appropriate
- completion of degree requirements, as appropriate
- participation in co-curricular and mentoring activities of choice
- if undecided, declaring a major and degree level by the end of the first year

Similar activities are available for students who are starting their studies in the spring semester.

RIT's other colleges

Students who qualify to enter baccalaureate programs in other colleges of RIT participate in the first-year programming and activities designed by the affiliated instructional/support faculty and the colleges. Most first-year students enrolled in colleges other than NTID are required to:

- participate in summer orientation options and in RIT's New Student Orientation program as well as NTID's Support Services Orientation workshops
- enroll in the RIT 365: RIT Connections (YOPS-010) course during the first semester
- participate in opportunities to explore and select a major, if needed

NTID General Education Curriculum

The NTID general education curriculum-liberal arts and sciences (LAS) supports the preparation of associate-degree seeking students for lifelong learning, for success in their chosen fields, and for their role in society as well-educated and knowledgeable citizens. The general education curriculum provides for a broad academic base of courses, with some organized into foundation and perspective categories. In general, AOS students complete all of their general education requirements through course work in the college of NTID, whereas students in the AAS and AS programs complete some required course work in the other colleges of RIT.

Students must complete a minimum number of general education credits for each degree. The general education distribution requirements chart shows the credit hour and distribution requirements for NTID AS, AAS, and AOS degrees. Students enrolled in colleges other than NTID should consult with their program departments about required general education courses.

NTID General Education Requirements

	AS Degree	AAS Degree	AOS Degree
Foundation	6*	6*	9†
ASL-Deaf Cultural Studies	—	(3)‡	—
Perspectives	15§	15§	6**
Electives	9††	3‡‡	—
Minimum Total General Education Semester Credit Hours	**30**	**24**	**15**

** RIT LAS Foundation courses First Year Writing: Writing Seminar (UWRT-150) (or another approved First Year Writing course) and a General Education Elective.*

† Career English I, II (NENG-212, 213) and mathematics (NMTH-120 or higher).

‡ An ASL-Deaf cultural studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another RIT college. In order to fulfill this requirement as part of the credits in the program, it must be a course approved for both AASASLDCS and a General Education – Perspective, or General Education – Elective, or it can be used to fulfill an Open Elective.

§ One course from the following RIT general education perspective categories: ethical, artistic, global, social, and scientific principles. The scientific principles course should be NSCI-250 level or higher for AS; NSCI-120 level or higher for AAS

*** Two courses from NTID general education perspective categories: ASL-Deaf cultural studies; communication, social, and global awareness; creative and innovative exploration; and scientific processes. See program for specific requirements.*

†† One NTID mathematics course (NMTH-250 and higher) or a College of Science mathematics course, plus two General Education Committee-approved elective courses.

‡‡ One NTID mathematics course (NMTH-120 or higher).

AS and AAS foundation and perspectives—RIT's framework for general education specifies the requirements for NTID AS and AAS students, including foundation and perspective courses. (See NTID general education requirements chart.)

All AS and AAS students are required to take two foundation courses: a First Year Writing (FYW) course approved by the RIT University Writing Program, and a General Education Elective; NTID AS and AAS students are advised to take First Year Writing: Writing Seminar (UWRT-150). This course provides students with experience in writing, reading and critical thinking techniques needed for success in LAS general education courses. Deaf and hard-of-hearing students are advised to earn a passing grade in the First Year Writing course before taking any general education courses, other than science and mathematics.

Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150), is based on the Writing Placement Exam or upon the satisfactory completion of Critical Reading and Writing (UWRT-100). AS and AAS students who enter NTID with English skills below the level required for their degree of choice will need to successfully complete additional courses before taking the First Year Writing course.

Deaf and hard-of-hearing students enrolled in AS and AAS degree programs are required to take courses that satisfy RIT's general education perspectives in five areas: ethical, artistic, global, social, and scientific principles. (See RIT graduation requirements for a description of the perspective categories.) For many of the perspective courses, students can choose between sections taught by either NTID faculty members or by faculty members from other colleges of RIT, including the College of Liberal Arts.

Where general education courses are taught by NTID faculty members, instructors communicate directly with students utilizing a variety of strategies that may include sign language without voice, sign language with voice, spoken language (FM systems are available), fingerspelling, printed/visual aids, Web-based instructional materials and individual tutoring. In cases where a faculty member's communication strategies do not appropriately meet a student's needs, students can request access services from the Department of Access Services for courses at NTID via the myaccess.rit.edu website.

General education courses in the other colleges of RIT include both deaf and hearing students. Educational access services, such as sign language interpreting services, FM systems, notetaking, or real-time captioning services may be requested by NTID-supported deaf and hard-of-hearing students. Alternative services also may be provided. Students also may request educational support services such as tutoring or academic advising.

NTID AOS General Education Framework

AOS students take three NTID foundation courses and two NTID perspective courses, following the specific requirements determined by each AOS program. Approved student learning outcomes associated with the NTID AOS general education framework ensure that students are provided with courses and experiences consistent with NTID's mission, strategic direction, and values. General education AOS courses typically also incorporate aspects of ASL-Deaf cultural studies, critical thinking, and communication. To the extent possible and when appropriate, AOS courses promote community service, active learning, and literacy development.

NTID AOS General Education Foundation Courses

Career English courses expose students to basic reading and writing that might be encountered in the workplace. Mathematics courses help students to identify and understand the role that mathematics plays in the world and on the job.

NTID AOS Perspective Courses

Communication, Social, and Global Awareness—Courses in this category promote an understanding of self and advocacy in relation to one's interactions with others in personal, professional, and civic lives. Courses address social dynamics as they vary across communities, ranging from local to global. Courses introduce students to contrasting cultural approaches to allow communication in situations such as face-to face, electronic format (such as e-mail or text), and group presentation situations.

Creative and Innovation Exploration—Courses in this category explore the creative process that leads to technological innovation, artistic expression and their products, in a variety of forms, while examining the influence of society and culture on the process and its end results. These courses provide insight into the creative process through innovative approaches to assignments or projects.

Scientific Processes—Courses in this category apply methods of scientific inquiry and problem solving in a laboratory or field experience. Science is more than a collection of facts, so students will be expected to participate in the processes of science as they collect and analyze data, and state conclusions.

Course placement

The goal of assessment for course placement is to ensure that students begin their studies at the appropriate level. Assessment for initial course placement will be made during orientation in the following areas: mathematics, American Sign Language, and writing and reading.

NTID science and mathematics curriculum

AS and AAS students are required to take a science course that satisfies the RIT scientific principles perspective general education requirement as well as a mathematics course that satisfies a general education elective. AS students typically take at least two additional mathematics and/or science courses as electives. All AOS programs require an NTID mathematics foundation course and some require an NTID scientific processes perspective course.

AS and AAS students, as well as AOS students, typically take mathematics and science courses in the college of NTID. These courses foster the reasoning and problem-solving skills that are a part of the foundation of their technical studies. In addition, the NTID science and mathematics curriculum provides an opportunity to develop the mathematical and scientific literacy demanded in today's society. (See typical courses listings in each program for specific requirements.)

American Sign Language-Deaf Cultural Studies curriculum

NTID deaf and hard-of-hearing students have an opportunity to study American Sign Language and learn about their heritage as Deaf people

through the ASL-Deaf cultural studies (ASL-DCS) curriculum. An ASL-Deaf cultural studies (AASASLDCS) course is required for AAS students for graduation. It can be taken in any semester and can be taken at NTID or another RIT college. In order to fulfill this requirement as part of the credits in the program, it should be a course that has both the AAS-ASLDCS and the General Education Perspective designations.

NTID English program

The NTID English program is designed to enable students to develop their English literacy skills. The program includes course sequences that offer instruction in reading and writing.

Students who plan to graduate with the AOS degree are required to complete 6 credits of English. Career English I and II (NENG-212 and 213) provide the English literacy skills needed for career-focused associate degrees. Students who enter NTID with English skills below the level required for their degree of choice will need to successfully complete additional courses before taking the required English courses.

The course sequence Analytical Reading & Writing I and II (NENG-221 and 222) and Bridge to College English I and II (NENG-231 and 232) is for students who demonstrate strong potential for improving their skills sufficiently to access the University Writing Program's curriculum for the AS and AAS degrees.

NTID Student Life

NTID Resources

www.rit.edu/ntid/sas

The National Technical Institute for the Deaf offers an array of educational and service activities for deaf and hard-of-hearing students. These activities and services include career and mental health counseling, student-life programming, and communication skills development in the form of speech-language instruction, speechreading, and listening/audiological services, as well as a state-of-the-art learning center.

NTID Learning Consortium

www.rit.edu/ntid/nlc/

The NTID Learning Consortium is a partnership among RIT and NTID academic departments and educational programs. The goal is to support student success in the college curriculum. A primary resource of the Learning Consortium is the NTID Learning Center (NLC).

The NLC represents a creative combination of human, physical, and technological resources through which partnerships can be realized. Resources include:

- regular tutorial support from faculty and advanced students directly tied to discipline-specific curricula and classroom activities. Tutoring is offered in a range of disciplines, including English, math, and technical program majors. Tutorial support for students is available on a walk-in, scheduled, or assigned basis, either individually or in small groups;
- computers supporting tutorial activities and course assignments as well as independent student work;
- designated areas for individual and small-group tutoring and studying, and
- designated areas for faculty/staff/students to record and edit videos for classroom materials and activities. The Video Production Studio hosts state-of-the-art hardware, HD cameras, a blue-screen backdrop, and editing software to facilitate optimal video quality.

The NLC also sponsors the Sprint Relay Experimental Distance Learning/Access Demonstration Lab. The Sprint Relay Lab is an RIT-wide resource for experimenting with innovative technologies in support of remote learners. Key features of the lab include:

- focusing on both instructional activities and access strategies for deaf and hard-of-hearing learners participating in remote educational experiences;
- evaluating alternative technologies in the context of varied educational objectives, access goals, and student and teacher preferences;
- serving as a beta testing site where instructional and access technologies in support of remote learning can be developed, refined, and exported for use throughout RIT. For example, during AY18-19, a Revolution Lightboard was purchased and is being used to record immersive presentations for online instructional materials.
- providing a forum for information exchange; exploration of new instructional and access strategies; and training among teachers, students, access service providers, instructional designers and technologists, and researchers; and
- sponsoring vendor-display/consumer-testing for new products related to instructional and access technologies.

The lab includes two side-by-side short-throw interactive projectors; a central projector/display system; a matrix router enabling versatile distribution of information to computer monitors and wall-mounted displays throughout the room; and four wall-mounted video cameras to record in various settings and configurations. The lab supports the creation of online course materials for on-campus and online courses.

In the fall of 2022, the NLC became the first approved Pearson Vue Testing Center for DHH in the world. NTID is now able to provide IT and professional certification exams for NTID students, staff, and alumni. To date, over 30 CompTIA certification exams have been administered in this Deaf friendly test environment. Additional credentialing programs will be offered in the future.

Communication Studies and Services

www.ntid.rit.edu/css

Communication competence is considered an important component of the student's educational experience and NTID strongly encourages all students to expand their communication skills to communicate with diverse audiences in educational, civic, and professional settings. Communication efforts focus on the effective expression of ideas independent of the language (ASL or English) that the student chooses to use. The communication studies and services department and the department of American Sign Language and interpreting eeducation provide intensive support and instruction for the development of communication competencies needed to enhance students' professional and personal success. The faculty and staff of the communication studies and services department conduct assessments and provide course work, workshops, and individualized instruction. They also work in collaboration with faculty and staff across the university.

Speech and language services: Speech-language pathologists provide learning activities that focus on the development of a full range of communication competencies. These activities include individual speech-language assessment and instruction, speech-language lab activities that support technical vocabulary/communication and second-language learning, and individualized use of multimedia and computerized visual feedback systems. Through these activities, students can work on conversational interactions, job-related communication skills, technical and formal presentations, and job interviews.

These services are open to all RIT students and are available through individual appointments with speech-language pathologists or on a walk-in basis through the Speech and Language Center (Johnson Hall, room 3225). This lab has individual private rooms for pronunciation practice, computers for speech and language practice and visual feedback, and stations for digital recording and playback. There is no charge for utilizing these services. The faculty and staff in the department are certified by the American Speech-Language-Hearing Association.

Audiology services: Audiologists offer a variety of services and information related to hearing aids, cochlear implants, communication strategies, telecommunications, assistive technologies, auditory training, speechreading, and job interviewing. Hearing and hearing-aid evaluations are available through the Audiology Center (Johnson Hall, room 3130). Evaluations are provided by audiologists certified by the American Speech-Language-Hearing Association and licensed through the State of New York. The NTID Audiology Center provides the RIT community with services related to hearing loss, hearing aids, cochlear implants, and accessories. Students may visit the center to schedule appointments with an audiologist as well as with consulting optometrists and otolaryngologists in the Eye and Ear Clinic. Services are available to all students, and are provided at no cost. Faculty and staff are available daily in the center to discuss issues related to hearing loss, tinnitus, cochlear implants, and other areas. FM and Roger systems can be loaned to students for the academic year at no cost. Students can also go to the Audiology Center to purchase hearing aid and cochlear implant accessories, including batteries, earhooks, and earmolds, and for hearing aid or cochlear implant repairs, as well as other services. The center is located in Johnson Hall, room 3130 and can be contacted by calling (585) 475-6473 (voice) or by emailing audiology@rit.edu.

Students can go to the Audiology Center to purchase hearing aid and cochlear implant accessories, including batteries, earhooks, and earmolds, and for hearing aid or cochlear implant repairs, as well as other services. In addition, students can schedule appointments for audiology and cochlear implant clinics with faculty and staff as well as with consultant ophthalmologists and otolaryngologists in the Eye and Ear Clinic. Services are available to all students, and most are provided at no cost.

NTID Counseling and Academic Advising Services

www.ntid.rit.edu/caas
(585) 475-6468 (V), (585) 286-3485 (VP)

NTID Counseling and Academic Advising Services (CAAS) is committed to supporting students to realize their full potential for a successful college experience. In pursuit of this goal, each NTID-supported associate level student is assigned a Counselor/Academic Advisor (CAA). Each CAA is trained in providing a full complement of academic advising, career counseling, personal/transitional counseling, and referral services. NTID-supported students in bachelor's degree programs receive all the services listed above with the exception of academic advising, which is instead provided by their primary academic advisor in their home RIT college. A student's CAA assists with student orientation, educational and career planning, adjustment to college life, study-skills development, personal and interpersonal concerns, and referral to on-campus and community resources. CAAS also serves as a confidential site for Title IX.

NTID Counseling and Psychological Services (NCaPS)

(585) 475-2261 or (855) 436-1245 (after hours)

The NTID Counseling and Psychological Services (NCaPS) office is comprised of licensed mental health professionals who provide confidential mental health counseling to all NTID-supported students (Deaf, hard of hearing, and hearing). Treatment plans may include individual counseling, therapy groups, workshops, and referrals for psychiatric services, as well as support from programs at NTID/RIT and/or the community. NCaPS works closely with RIT's Counseling and Psychological Services, Student Health Center, the Center for Residence Life, NTID's Student and Academic Services, the NTID Counseling and Academic Advising Services department, Public Safety, and related campus units to provide 24-hour emergency crisis intervention service to students.

Some of the typical concerns that students bring to NCaPS include depression, anxiety, family conflicts, problems with friends and romantic relationships, sexual orientation, gender identity, suicidal thoughts and self-harming behaviors, trauma from personal history and from social injustices and oppression, as well as many other issues.

NTID Student Life Team

(585) 250-1197 (videophone)

The Student Life Team (SLT) is committed to providing deaf and hard-of-hearing students with resources and support for success throughout college and after graduation. SLT builds connections with students by providing co-curricular and late-night programming, impactful workshop events, and training to help students enhance their quality of life, sense of relevancy of their studies, and overall satisfaction with college. Through collaboration with other units within NTID and RIT, SLT incorporates creative program strategies involving student paraprofessionals. SLT facilitates cultural diversity awareness, BIPOC student support, leadership development, and exposure to Deaf Culture, ASL, and other communication modes. SLT also addresses contemporary social issues that impact college students.

NTID Summer Vestibule Program

www.rit.edu/ntid/svp

The Summer Vestibule Program (SVP) is NTID's required orientation program for new deaf and hard-of-hearing students who have been accepted into RIT. A student's SVP experience begins

upon payment of the admissions deposit. Students will start to make connections with various people on campus and will receive guidance in areas such as career awareness, decision making, and assessments of academic skills and competencies. Prior to arriving on campus, students admitted to NTID associate degree, pre-baccalaureate, and career exploration programs will take placement assessments in mathematics and English, meet with their department chair to review and confirm their major, and design their individual academic plans. Students will also meet their NTID CAA to discuss their goals as well as any support that they may need.

Acceptance into SVP does not automatically guarantee admission to the program the student selects. The final decision on acceptance into a program of study for the fall semester is the responsibility of each academic department. Admission to a program depends on successfully completing SVP, having requisite skills to begin the program of study, and availability of space in that program.

Upon arrival to campus for SVP/RIT Orientation, deaf and hard-of-hearing students participate in various activities, including orientation to college services and academic expectations. Recreational and social activities also are a part of the program as they transition to life in college.

NTID Wellness and Intramural Athletics

www.rit.edu/studentaffairs/criw/
(585) 475-6559

NTID provides services that maximize access and success for deaf and hard-of-hearing students engaged in health/wellness seminar discipline courses and other programs offered by the Center for Wellness Education and Center for Recreation & Intramurals. Support services ensure that education, consultation, communication, and resource opportunities are available to deaf and hard-of-hearing students taking courses, engaging in programs, or participating in intramural athletics, such as Deaf Basketball Association or Deaf Volleyball Association.

Varsity Intercollegiate Athletics

www.ntid.rit.edu/athletes/athlete-development/program
(585) 371-7044

NTID established the RIT/NTID Athlete Development Program to provide support and training to improve the quality of NTID-supported student-athletes' experience as key members of their respective varsity athletic programs. Services offered for NTID-supported student-athletes and members of the athletic department include: academic support, career development, educational workshops, mentoring, leadership training, and access services.

NTID Support Services Orientation Workshops

The Support Services Orientation (SSO) occurs as a part of the RIT New Student Orientation week of activities. SSO workshops provide deaf and hard-of-hearing students who have been accepted into an RIT bachelor's degree program with important information on NTID's educational access and support services. At SSO, students learn how to make requests for these services, become acquainted with RIT's campus and services, and meet their designated NTID Support Coordinator who will assist with obtaining support services throughout the academic year.

NTID Student Congress

The NTID Student Congress (NSC) is a Representative Student Organization (RSO) for NTID-supported students and for numerous deaf and hard-of-hearing clubs and organizations at Rochester Institute of Technology (RIT). NSC provides activities and programs for the community; helps interested students communicate their needs, idea, and concerns about campus life to faculty members, administrators, and other student clubs/organizations within RIT; provides opportunities for developing leadership skills; and encourages students with opportunities to interact with their peers socially, academically, athletically, and culturally. Students interested in getting involved may stop in at the NSC office in the CSD Student Development Center.

NTID Performing Arts

www.rit.edu/ntid/performing-arts

NTID Performing Arts provides academic programs and extracurricular activities that enrich students' college experience. For all students, the department offers a certificate in performing arts as well as a wide variety of courses that satisfy undergraduate general education requirements. For bachelor level students, the department offers immersions and minors in dance and, separately, in theatre design and stagecraft. The department also produces several plays, musicals, and dance shows each semester. We collaborate frequently with School of Performing Arts faculty from RIT's College of Liberal Arts. All students are welcome to be involved with our productions, whether onstage or backstage. Deaf and hard-of-hearing students who take department courses or are involved in productions are eligible to receive tuition scholarships. For more information, contact Jill Bradbury, department chair, at jmbnpa1@rit.edu.

NTID Admission Information

Costs of attending RIT through NTID

The total cost of attending RIT through NTID sponsorship includes tuition, room, board, and fees. Charges to NTID-supported students are updated each year. The cost of books and supplies is students' responsibility. These costs vary depending on each student's program of study.

New students attending the Summer Vestibule Program will be charged a fee. Students participating in cooperative education are not charged tuition or fees for that particular term. They will be charged room, board, and residence hall fees, however, if they live on campus while participating in a co-op.

All students are required to carry accident and health insurance. Students may choose insurance coverage through RIT, or they may waive this coverage (international students must provide evidence of other insurance coverage to waive RIT coverage). Waiver cards will be sent to all accepted students during the summer and will be available at registration.

For information about NTID tuition, room and board, and fees, please see the RIT/NTID website www.rit.edu/sfs/tuition-and-fees.

Deaf and hard-of-hearing applicants

There is one unified process for deaf and hard-of-hearing students to apply to enter any of RIT's nine colleges. Deaf and hard-of-hearing applicants should indicate their status on the RIT application form and must submit an audiogram to qualify for NTID's federally supported tuition rate and to be eligible for a variety of campus resources and support services. See join.rit.edu/apply for application instructions as well as the information in the Undergraduate Admission section of this bulletin.

Transfer credit

As part of the transfer application process, RIT requires official transcripts from all colleges and universities a student has previously attended. An evaluation of transfer credits and an estimated timeline to graduation will be provided following the offer of admission. High school students with completed college course work as well as AP and IB credit may have their transcript/scores submitted prior to enrollment to be evaluated for transfer credit.

Campus visits

Deaf and hard-of-hearing students who wish to visit RIT may contact NTID's Office of Admissions at (585) 475-6700 (voice), by videophone at (585) 743-1366, or via e-mail at visitNTID@rit.edu. Students may take tours of campus and arrange personal interviews. Both of these are strongly encouraged but are not required for admission.

Facilities

A modern academic and residential building complex on the RIT campus is designed to meet the specific needs of deaf and hard-of-hearing students. Lyndon Baines Johnson Hall and Hugh L. Carey Hall house laboratories, offices, communication studies and services centers, classrooms, and a theater. These classrooms and laboratories support the latest technologies for teaching and include high-resolution projection displays, digital document displays, DVDs, FM systems, Internet access, smart display boards, and other computer-based services. In addition, classrooms are specifically designed to meet the unique needs of both students and teachers.

The Communication Service for the Deaf (CSD) Student Development Center, interconnecting Johnson Hall and The Commons, which is an adjacent dining hall, is the focal point for students, faculty, and staff to engage in social events and community activities. In addition to a large multipurpose space for formal and informal lectures, small meeting rooms and offices provide workspace for student government groups, clubs, and organizations.

Sebastian and Lenore Rosica Hall, adjoining The Commons, is NTID's center for sponsored research. Rosica Hall is the home for several research centers which promote collaboration between faculty and staff. Rosica Hall also boasts an Innovation Center, a place where students, faculty, and mentors work together using multidisciplinary collaborative innovation teams to turn their ideas into reality.

NTID's main academic building, Johnson Hall, boasts a state-of-the-art learning center. Using the latest technologies available, this center provides academic experiences, tutorial services, and course enrichment opportunities for all students. It provides students with access to networked computer workstations, videoconferencing capability, and a special technology-centered classroom.

One of the features of Johnson Hall is the Joseph F. and Helen C. Dyer Arts Center. This 7,000-square-foot facility features art exhibits as well as NTID's permanent art collection. The center also incorporates art-related educational activities, such as lectures and demonstrations, while serving as a multiuse facility. Johnson Hall also includes the Panara Theatre, a 500-seat facility where theatrical productions are produced simultaneously in American Sign Language and English. The theater also hosts a wide range of cultural activities from all over the world, enriching student life and broadening students' world view.

All residence hall rooms, campus apartments, classrooms, laboratories, and administrative areas can access the campus-wide computer network with wired or wireless connections.

All RIT and NTID residence halls are aggressively maintained and provide students with an appealing, highly functional living environment. Special rooms have been created to serve physically

NATIONAL TECHNICAL INSTITUTE FOR THE DEAF FIXED CHARGES 2023-2024 (DOMESTIC STUDENTS)

	Summer Vestible Program Aug. 17-26, 2023	SSO Aug. 20-27, 2023	Fall Semester Aug. 28-Dec. 20, 2023	Spring Semester Jan. 16-May 8, 2024
Tuition	$0	$0	$9,889	$9,889
Room	$0	$0	$4,516	$4,516
Board (standard meal plan)	$0	$0	$3,242	$3,242
Student Fees†	$0	$0	$440	$440
Orientation Fee‡	$0	$0	$335	$0
Total	**$0**	**$0**	**$18,442**	**$18,087**

** SSO (Support Services Orientation) workshops for NTID-supported students accepted to other RIT colleges. Date subject to change.*

† Student fees are required of all full-time students and include: student health fee (per semester) and student activities fee (per semester).

‡ Charge to defray cost of fall Orientation program, for freshmen and new students only.

Notes: Required books and supplies will impact these figures.

The standard academic year includes fall and spring semesters.

New students accepted to the Summer Vestibule Program will be charged according to the prorated fee schedule indicated above.

Students in co-op will not be charged tuition or fees for that particular semester and will be charged room and board only if they live on campus while they work.

challenged students. Students are encouraged to bring their own computers to connect to the campus network and Internet from their rooms. A selection of apartment units also is available. Visual emergency strobe lights and visual doorbells are present throughout residence halls, apartments, and academic buildings.

Television, a basic part of the college's communication network, is used for both education and entertainment. RIT provides a streaming service that provides the ability to watch live television and record shows for future viewing. All students living in RIT housing with access to RIT's network will have access to 64 channels as well as HBO, HBO Go, and Cinemax through their RIT student login.

A well-equipped television facility provides studio services to produce class and self-instruction media for use within the university.

Telecommunications

NTID students can access telephone services through VRS and computer-based relay services. CapTel service also is available in New York state. Public videophones are available to students in several on campus locations. Students who have their own videophones are encouraged to bring them to campus at move-in, and students who do not yet have videophones will be encouraged to work with the VRS provider of their choice to acquire one.

Communication skills

Communication competence is considered an important component of the student's educational experience and NTID strongly encourages all students to expand their communication skills to communicate with diverse audiences in educational, civic, and professional settings. Communication efforts focus on the effective expression of ideas independent of the language (ASL or English) that the student chooses to use. The communication studies and services department and the department of American Sign Language and interpreting education provide intensive support and instruction for the development of communication competencies needed to enhance students' professional and personal success. The faculty and staff of the communication studies and services department conduct assessments and provide course work, workshops, and individualized instruction. They also work in collaboration with faculty and staff across the university.

Speech and Language Center

The NTID Audiology Center provides the RIT community with services related to hearing loss, hearing aids, cochlear implants, and accessories. Students may visit the center to schedule appointments with an audiologist as well as with consulting optometrists and otolaryngologists in the Eye and Ear Clinic. Services are available to all students, and are provided at no cost. Faculty and staff are available daily in the center to discuss issues related to hearing loss, tinnitus, cochlear implants, and other areas. FM and Roger systems can be loaned to students for the academic year at no cost. Students can also go to the Audiology Center to purchase hearing aid and cochlear implant accessories, including batteries, earhooks, and earmolds, and for hearing aid or cochlear implant repairs, as well as other services. The center is located in Johnson Hall, room 3130 and can be contacted by calling (585) 475-6473 (voice) or by emailing audiology@rit.edu.

NTID Counseling and Academic Advising Services

Each NTID-supported associate level student is assigned a Counselor/Academic Advisor (CAA) in NTID Counseling and Academic Advising Services (CAAS). A CAA provides career and personal/transitional counseling to all of their advisees as well as academic advising to students enrolled in NTID programs. Bachelor's-level students in RIT colleges outside of NTID can receive career/personal/transitional counseling from CAAS, but they obtain academic advising from their primary academic advisor in their home college. CAAS offers career assessments to all NTID-supported students. CAAS also serves as a confidential Title IX site.

Additionally, each CAA works closely with students and faculty toward the goal of helping students achieve academic success. Each CAA consults and networks with on-campus and community resources to support students with their academic, career, and personal aspirations. Freshman Seminar is taught by a CAA to assist students with their transition to college. Students can contact their assigned CAA to schedule an appointment.

NTID Counseling and Psychological Services (NCaPS)

The NTID Counseling and Psychological Services (NCaPS) office is comprised of licensed mental health professionals who provide confidential mental health counseling to all NTID supported students (Deaf, hard of hearing, and hearing). Treatment plans may include individual counseling, therapy groups, workshops, and referrals for psychiatric services, as well as support from programs at NTID/RIT and/or the community. NCaPs works closely with RIT's Counseling and Psychological Services, Student Health Center, the Center for Residence Life, NTID's Student and Academic Services, the NTID Counseling and Academic Advising Services department, Public Safety, and related campus units to provide 24-hour emergency crisis intervention service to students.

Some of the typical concerns that students bring to NCaPS include depression, anxiety, family conflicts, problems with friends and romantic relationships, sexual orientation, gender identity, suicidal thoughts and self-harming behaviors, trauma from personal history and from social injustices and oppression, as well as many other issues.

Cooperative Education

A feature of most RIT academic programs, including those offered through NTID, is cooperative education. Co-op provides students with the opportunity to gain hands-on experience in their chosen career field. NTID AAS and AOS programs require a co-op education experience. A majority of students complete the co-op experience during the summer. However, co-op can be completed any time during the year, consistent with a student's course schedule.

Employment

Employment of deaf and hard-of-hearing graduates is a high priority for NTID. To help ensure that graduates obtain program-related employment, NTID Co-op and Career Center assigns each new student an advisor experienced in employment assistance in the various academic concentrations. To help prepare them for obtaining cooperative education experiences and full-time employment, students in AAS and AOS programs take required

job preparation courses.

The employment advisors are in constant contact with potential employers throughout the United States. In addition, the center hosts an annual career fair attended by national employers. Such services have contributed to a high employment rate of deaf and hard-of-hearing graduates. Over the past five years, 95 percent of deaf and hard-of-hearing graduates who chose to enter the workforce have found employment.

Research

NTID has been at the forefront of research on deaf education since its inception. While research on this topic, especially at the post-secondary level, remains central to NTID's mission, an increasing amount and diversity of research foci have emerged at NTID in recent years. Today, NTID faculty explore a wide variety of research topics pertaining to the deaf experience, including education, occupational dynamics, linguistics, early childhood development, cognition, culture, sign language interpreting, health disparities, healthcare systemic barriers, mathematics, and access technology. Other NTID faculty explore discipline-specific topics in fields such as astrophysics, psychology, chemistry, history, and engineering as befits their academic training. NTID students are deeply engaged in all of these areas of research as an invaluable part of their education. Faculty strive to provide students with mentored hands-on scholarship experiences and paid positions as research assistants. Other forms of support are available to students such as funds for summer research projects and travel funds for presenting at professional conferences.

3D Graphics Technology, AAS

www.rit.edu/study/3d-graphics-technology-aas
Andrea Zuchegno, Associate Professor
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Program overview

The associate in applied science (AAS) degree in 3D graphics technology introduces concepts related to three dimensional (3D) graphics, and teaches you the creative and technical skills required to produce 3D graphics, 3D prints, environmental renderings that range from artistic to photorealistic in quality, and 3D models used in multimedia and animation. A combination of traditional design skills and digital design techniques are taught, along with the representation of concepts of time, motion, and lighting principles. This program prepares you for one of two options: entering the 3D graphics industry after graduation or continuing your studies in the 3D digital design BFA program offered by RIT's College of Art and Design. This program is available for qualified deaf and hard of hearing students.

The program's curriculum prepares and trains you for entry-level employment in the 3D graphics industry. The 3D graphics technology program, offered by RIT's National Technical Institute for the Deaf, covers the artistic and technical sides of the industry, with a specific focus on the modeling, animation, and visualization processes in 3D graphics. You acquire the creative and technical skills required to create 3D graphics, 3D printouts, environmental visualization graphics, and 3D models used in multimedia and animation.

The program also requires you to acquire skills in traditional media drawing and painting, as well as in animation, modeling, 3D printing, and reading and understanding design plans and blueprints. You acquire computer-based skills in 2D and 3D graphics software. In addition, you'll learn skills related to project management and teamwork.

The capstone course offered in the final semester provides you with an opportunity to utilize your skills on an applied skill-focused project that is completed with advice and guidance of faculty from the visual communications studies department. The structure of the capstone course is that of a self-directed, semester-long project that is completed either on an individual basis or as part of a team-based project.

You gain real work experience through one term of required cooperative education employment. You also complete a required portfolio workshop course in which you refine and complete your portfolio as needed for application to the BFA program in 3D digital design in RIT's College of Art and Design, or for an employment search.

The 3D graphics technology program is available as an associate of applied science (AAS) degree or as an Associate+Bachelor's Degree Program.

The AAS degree in 3D graphics technology is a career-focused degree program that leads to immediate entry into well-paying careers in the graphic arts industry.

The Associate+Bachelor's Degree Program in 3D graphics technology prepares you to complete an RIT's bachelor's degree. In this option, upon successful completion of the AAS degree in 3D graphics technology, provided you have a 3.0 or higher grade point average in the program and a strong portfolio, you will enroll into RIT's College of Arts and Design where you can pursue a bachelor's degree in 3D digital design.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

STEM and the 3D graphics technology program

Education in STEM (science, technology, engineering, math) careers is a major emphasis for students, parents, and counselors as they consider which college programs match students' interests and aptitudes. Funding for STEM career preparation is often a driving factor. The NTID 3D graphics technology program is a STEM career program. 3D graphics is listed in the technology/computer science STEM disciplines. 3D graphics and production for 3D printing, print media, and digital media cannot happen without immersion in computer technology.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the 3D graphics technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

3D Graphics Technology, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
N3DG-100	Design Drawing	3
N3DG-110	Basic 3D Modeling	3
N3DG-115	Intermediate 3D Modeling and Techniques	3
N3DG-140	3D Lighting and Materials	3
NAIS-120	Principles of Design and Color	3
NAIS-130	Raster and Vector Graphics	3
NCAR-010	Freshman Seminar	0
UWRT-150	FYW: Writing Seminar (General Education-First Year Writing)	3
	General Education – Elective†	3
	General Education – Elective‡	3
Second Year		
ARTH-135	History of Western Art: Ancient to Medieval (General Education – Artistic Perspective)	3
ARTH-136	History of Western Art: Renaissance to Modern (General Education – Global Perspective)	3
N3DG-210	Advanced 3D Modeling and Techniques	3
N3DG-220	Principles of 4D Design	3
N3DG-225	3D Motion	3
N3DG-230	3D Printing	3
N3DG-260	Professional Practices	3
NAIS-201	Employment Seminar	3
NAIS-299	Co-op Visual Communication Studies	0
	Program Electives	6
Third Year		
N3DG-270	Capstone	3
NAIS-292	Portfolio Workshop	3
	General Education – Ethical Perspective†	3
	General Education – Social Perspective†	3
	General Education – Scientific Principles Perspective§	3
Total Semester Credit Hours		**72**

Please see the NTID General Education Curriculum (GE) for more information.

Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.

† An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and a General Education - Perspective.

‡ Any mathematics course numbered NMTH-10 or higher.

§ Any science course numbers NSCI-120 or higher.

Program electives

NAIS-140	Graphic Design and Typography I
NAIS-150	Page Layout I
NAIS-160	Web Design I
NAIS-199	Independent Study-Visual Communications Studies
NAIS-289	Special Topics-Visual Communications Studies
NGRD-211	Drawing II
NGRD-257	Animation
NGRD-258	Cartooning
NGRP-110	Digital Photography I
NGRP-210	Digital Photography II
NGRP-220	Videography
NGRP-232	Image Manipulation
NGRP-260	Web Design II

Admission requirements

For the career-focused AAS Degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

For the AAS Degree Leading to Bachelor's Degree (Associate+Bachelor's Program)

- 2 years of high school math preferred
- 1 year of high school science preferred
- English language skills as evidenced by application materials determine acceptance into the AAS or the AOS program

Specific English, Mathematics, and Science Requirements and other Recommendations

Successful completion of the Summer Vestibule Program is required.

- English: Placement into the Critical Reading and Writing (UWRT-100) course.
- Mathematics: Placement into the Mathematics in Society (NMTH-140) course. Typically, students entering this major will have completed at least two years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Accounting Technology, AAS

www.rit.edu/study/accounting-technology-aas

Mark Pfuntner, Associate Professor
585-286-4640, mjpnvd@ntid.rit.edu

Program overview

The accounting technology program prepares you for a career in accounting-related occupations. You'll learn the functions of the complete accounting cycle for service, merchandising, and manufacturing businesses. As a graduate of the program, you'll use computers to maintain and reconcile various financial records, verify business records, and perform other clerical and administrative duties. This program is available for qualified deaf and hard of hearing students.

Accounting technology, offered by RIT's National Technical Institute for the Deaf, is available as an associate in applied science (AAS) degree or as an Associate+Bachelor's Degree Program.

The AAS degree in accounting technology is a career-focused degree program that leads to immediate entry into well-paying careers at the paraprofessional or technician level.

The Associate+Bachelor's Degree Program in accounting technology prepares you to complete an RIT bachelor's degree. In this option, upon successful completion of the AAS degree in accounting technology, provided you maintain a 2.5 or higher grade point average in the program, you will enroll into RIT's School of Individualized Study where you can pursue a bachelor's degree in applied arts and science.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Microsoft Certification

NTID's business studies department operates an authorized testing center for Microsoft Office Specialist. Preparatory courses are offered for several exams each semester.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the accounting technology program are required to complete a cooperative education experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Accounting Technology, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACC-130	Personal Finance	3
NACC-201	Accounting 1	3
NAST-140	Essential Document Production	3
NAST-150	Advanced Document Production	3
NAST-160	Fundamentals of Spreadsheet Applications	3
NBUS-200	Orientation to Business	3
NCAR-010	Freshman Seminar	0
	General Education – Elective*	3
	General Education – Elective†	3
	General Education – Ethical Perspective*	3
	General Education – First Year Writing (WI)	3
Second Year		
NACC-202	Accounting 2	3
NACC-203	Accounting 3	3
NACC-299	Co-op: Accounting Technology/Business Technology	0
NAST-210	Essentials of Business Communication	3
NAST-215	Integrated Document Production	3
NAST-220	Fundamentals of Database Applications	3
NBUS-213	Applied Ethics	3
NBUS-217	Fundamentals of Management	3
	General Education – Artistic Perspective*	3
	General Education – Global Perspective*	3
	General Education – Social Perspective*	3
Third Year		
NACC-204	Accounting Capstone	3
NBUS-220	Introduction to Economics	3
NBUS-223	Fundamentals of Marketing	3
	Open Elective*	3
	General Education – Scientific Principles Perspective	3
Total Semester Credit Hours		**75**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
* An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and a General Education – Perspective or General Education – Elective or it can be used to fulfill an Open Elective.
† Any mathematics course numbered NMTH-140 or higher.

Admission requirements

For the career-focused AAS degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

For the AAS degree leading to bachelor's degree (Associate+Bachelor's program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills as evidenced by application materials determine associate degree options.

Specific English, mathematics, and science requirements and other recommendations

- English: Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150). Students typically enter First Year Writing with reading scores equivalent to 130 or higher on the NTID Reading Test and writing scores of 67 or higher on the NTID Writing Test. However, students who complete AAS degrees typically enter NTID with reading scores above 98 on the NTID Reading Test and writing scores above 50 on the NTID Writing Test.
- Mathematics: Any math course numbered NMTH-140 or higher is required. Typically, students entering this program will have completed at least two years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science.
- ACT: For the Career-Focused AAS degree, the ACT middle 50% composite score is 14-17. For the Associate+Bachelor AAS degree, the ACT middle 50% composite score is 18-21 (optional).

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Administrative Support Technology, AAS

www.rit.edu/study/administrative-support-technology-aas

Mark Pfuntner, Associate Professor
585-286-4640, mjpnvd@ntid.rit.edu

Program overview

In the administrative support technology program you will receive a foundation in computer software applications, business office procedures, and document preparation as well as opportunities to develop appropriate professional interpersonal and human relations skills. You'll be prepared for a career in a variety of business settings that include government, education, corporate settings, health care, and more This program is available for qualified deaf and hard of hearing students.

The administrative support technology program, offered by RIT's National Technical Institute for the Deaf, provides students with opportunities to develop skills needed in processing information using a variety of integrated office software applications as well as appropriate professional interpersonal communication skills. Graduates will input, manipulate, and retrieve data; use interactive office software and e-mail; learn information processing skills for applications such as word processing, spreadsheet, presentation, and database; and perform other office duties.

The administrative support technology is available as an associate in applied science (AAS) degree or as an Associate+Bachelor's Degree Program.

The AAS degree in administrative support technology is a career-focused degree program that leads to immediate entry into well-paying careers at the paraprofessional or technician level.

The Associate+Bachelor's Degree Program in administrative support technology prepares you to complete an RIT bachelor's degree. In this option, upon successful completion of the AAS degree in administrative support technology, provided you maintain a 2.5 or higher grade point average in the program, you will enroll into RIT's School of Individualized Study, where you can pursue a bachelor's degree in applied arts and science.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Microsoft Certification

NTID's business studies department operates an authorized testing center for Microsoft Office Specialist. Preparatory courses are offered for several exams each semester.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the administrative support technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Administrative Support Technology, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACC-130	Personal Finance	3
NACC-201	Accounting 1	3
NAST-140	Essential Document Production	3
NAST-150	Advanced Document Production	3
NAST-160	Fundamentals of Spreadsheet Applications	3
NBUS-200	Orientation to Business	3
NCAR-010	Freshman Seminar	0
	General Education - Elective*	3
	General Education - Elective†	3
	General Education - Ethical Perspective*	3
	General Education - First Year Writing (WI)	3
Second Year		
NAST-210	Essentials of Business Communication	3
NAST-215	Integrated Document Production	3
NAST-220	Fundamentals of Database Applications	3
NAST-225	Fundamentals of Graphic Applications	3
NAST-240	Administrative Support Technology Seminar	3
NAST-299	Co-op: Administrative Support Technology/Business Technology	0
NBUS-213	Applied Ethics	3
NBUS-217	Fundamentals of Management	3
	General Education - Global Perspective*	3
	General Education - Social Perspective*	3
	General Education - Scientific Principles Perspective	3
Third Year		
NAST-230	Fundamentals of Desktop Publishing	3
NBUS-221	Essentials of Human Resource Management	3
NBUS-223	Fundamentals of Marketing	3
	Open Elective	3
	General Education - Artistic Perspective*	3
Total Semester Credit Hours		**75**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
* An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and a General Education - Perspective or General Education - Elective or it can be used to fulfill an Open Elective.
† Any mathematics course numbered NMTH-140 or higher.

Admission requirements

For the career-focused AAS degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

For the AAS degree leading to bachelor's degree (Associate+Bachelor's program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills, as evidenced by application materials, determine associate degree options.

Specific English, mathematics, and science requirements and other recommendations

- English: Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150). Students typically enter First Year Writing with reading scores equivalent to 130 or higher on the NTID Reading Test and writing scores of 67 or higher on the NTID Writing Test. However, students who complete AAS degrees typically enter NTID with reading scores above 98 on the NTID Reading Test and writing scores above 50 on the NTID Writing Test.
- Mathematics: Mathematics course NMTH-140 or higher is required. Typically, students entering this program will have completed at least two years of high school mathematics.
- Science: Typically, students entering this program will have completed at least two years of high school science.
- ACT: For the Career-Focused AAS degree, the ACT middle 50% composite score is 14-17. For the Associate+Bachelor AAS degree, the ACT middle 50% composite score is 18-21 (optional).

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Applied Computer Technology, AAS

www.rit.edu/study/applied-computer-technology-aas

Brian Trager, Associate Professor
585-286-5318, Brian.Trager@rit.edu

Program overview

Computers are important to all parts of the economy, and the number of careers that involve work with computers is constantly expanding. Students in the associate in applied science (AAS) degree program in applied computer technology take courses to prepare them for careers that involve maintaining computer software and hardware, installing and maintaining computer networks, and working with a variety of computer applications. This program is available for qualified deaf and hard of hearing students.

The associate in applied science (AAS) degree in applied computer technology, offered by RIT's National Technical Institute for the Deaf, leads to immediate entry-level positions in the computing industry. It prepares you for a career in computer support occupations that involves:

- Installing, maintaining, upgrading and repairing computer hardware and software.
- Networking and security that allows computers to be secured and safely communicate and share resources with one another.

Concentrations

As a student in the applied computer technology program, you will select an area to specialize in by choosing a program concentration in either computer technical support or networking and cyber security.

Computer Technical Support Concentration: If you select this concentration, you will develop skills specific to working with people to solve their computer-related problems. These skills prepare you to work at a help desk responding to client's computer problems, and perform setup, upgrades and repairs to computers and computer peripherals.

Networking and Cyber Security Concentration: If you select this concentration, you will develop skills specific to network and network security support, including server set-up, support and administration; network set-up, troubleshooting and repair; identifying and implementing security policies; and installing appropriate hardware and software to support a secure and robust network.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the applied computer technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Applied Computer Technology (computer technical support concentration), AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACT-150	Intro to PC Hardware	3
NACT-151	Windows Operating Systems	3
NACT-155	Introduction to Linux	3
NACT-160	Networking Essentials	3
NACT-161	Client/Server Networks	3
NACT-170	Intro to Web Development	3
NCAR-010	Freshman Seminar	0
UWRT-150	FYW: Writing Seminar (WI) (General Education – First Year Writing)	3
	General Education – Elective†	3
	General Education – Elective‡	3
	General Education – Ethical Perspective†	3
Second Year		
NACT-200	Help Desk Support	3
NACT-230	Introduction to Programming	3
NACT-235	Intro to Database Applications	3
NACT-240	The World of Work	3
NACT-253	Cloud Computing Concepts	3
NACT-255	A+ Certification Prep	3
NACT-295	ACT Technical Capstone	3
NACT-299	Co-op: Applied Computer Tech	0
	General Education - Artistic Perspective†	3
	General Education - Global Perspective†	3
	General Education - Social Perspective†	3
Third Year		
NACT-250	Computer and Data Security	3
	ACT Program Electives**	6
	General Education – Scientific Principles Perspective	3
Total Semester Credit Hours		**72**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and General Education - Perspective or General Education - Elective.
‡ NTID mathematics course NMTH-140 or higher. It is recommended that students take NMTH-140 Mathematics in Society.
** Please see list of ACT program electives below.

Applied Computer Technology (networking and cyber security concentration), AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACT-150	Intro to PC Hardware	3
NACT-151	Windows Operating Systems	3
NACT-155	Introduction to Linux	3
NACT-160	Networking Essentials	3
NACT-161	Client/Server Networks	3
NACT-170	Intro to Web Development	3
NCAR-010	Freshman Seminar	0
UWRT-150	FYW: Writing Seminar (WI) (General Education – First Year Writing)	3
	General Education – Elective†	3
	General Education – Elective‡	3
	General Education – Ethical Perspective†	3
Second Year		
NACT-200	Help Desk Support	3
NACT-230	Introduction to Programming	3
NACT-235	Intro to Database Applications	3
NACT-240	The World of Work	3
NACT-260	LAN/WAN Design	3
NACT-261	Network Security	3
NACT-295	ACT Technical Capstone	3
NACT-299	Co-op: Applied Computer Tech	0
	General Education – Artistic Perspective†	3
	General Education – Global Perspective†	3
	General Education – Social Perspective†	3
Third Year		
NACT-262	Fundamentals of System Administration	3
	ACT Program Electives**	6
	General Education – Scientific Principles Perspective	3
Total Semester Credit Hours		**72**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and General Education - Perspective or General Education - Elective.
‡ NTID mathematics course NMTH-120 or higher. It is recommended that students take NMTH-140 Mathematics in Society.
** Please see list of ACT program electives below.

ACT program electives

NACA-120	Problem Analysis and Software Development I
NACC-130	Personal Finance
NACT-250	Computer and Data Security§
NACT-251	Digital Systems Integration§
NACT-252	Server Management & Security
NACT-253	Cloud Computing Concepts§
NACT-255	A+ Certification Prep
NACT-260	LAN WAN Design†
NACT-261	Network Security†
NACT-262	Fundamentals of System Administration†
NACT-265	Network+ Certification Prep
NACT-266	Network Defense Technologies
NACT-270	Web Applications
NACT-271	Client-Side Scripting
NACT-275	Security+ Certification Prep
NAIS-130	Raster and Vector Graphics
NAIS-160	Web Design I
NBUS-200	Orientation to Business
NBUS-227	Principles of Marketing
NGRP-220	Videography
NMAD-155	Survey of Emerging Visual Design

§ Students taking the NCS concentration may take this course from the CTS concentration as an elective.
† Students taking the CTS concentration may take this course from the NCS concentration as an elective.

Admission requirements

For the career-focused AAS degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

Specific English, mathematics and science requirements and other recommendations

Successful completion of a sampling experience in applied computer technology, either through the Summer Vestibule Program or equivalent career exploration course, is a prerequisite for this program, as are the following:

- English: Placement into a First Year Writing course, such as the FYW: Writing Seminar (UWRT-150). Students typically enter First Year Writing with reading scores equivalent to 130 or higher on the NTID Reading Test and writing scores of 67 or higher on the NTID Writing Test. However, students who complete AAS degrees typically enter NTID with reading scores above 98 on the NTID Reading Test and writing scores above 50 on the NTID Writing Test.
- Mathematics: Placement into Mathematics in Society (NMTH-140) or a higher-level course. Typically, students entering this program will have completed at least three years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Applied Computer Technology, AOS

www.rit.edu/study/applied-computer-technology-aos

Brian Trager, Associate Professor
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Program overview

Computers are important to all parts of the economy, and the number of careers that involve work with computers is constantly expanding. Students in the associate in occupational studies (AOS) degree program in applied computer technology take courses to prepare them for careers that involve maintaining computer software and hardware, installing and maintaining computer networks, and working with a variety of computer applications. This program is available for qualified deaf and hard of hearing students.

The associate in occupational studies (AOS) degree in applied computer technology, offered by RIT's National Technical Institute for the Deaf, leads to immediate entry-level positions in the computing industry. It prepares you for a career in computer support occupations that involves:

- Installing, maintaining, upgrading and repairing computer hardware and software.
- Networking and security that allows computers to be secured and safely communicate and share resources with one another.

Concentrations

As a student in the applied computer technology program, you will select an area to specialize in by choosing a program concentration in either computer technical support or networking and cyber security.

Computer Technical Support Concentration: If you select this concentration, you will develop skills specific to working with people to solve their computer-related problems. These skills prepare you to work at a help desk responding to client's computer problems, and perform setup, upgrades and repairs to computers and computer peripherals.

Networking and Cyber Security Concentration: If you select this concentration, you will develop skills specific to network and network security support, including server set-up, support and administration; network set-up, troubleshooting and repair; identifying and implementing security policies; and installing appropriate hardware and software to support a secure and robust network.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the applied computer technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Applied Computer Technology (computer technical support concentration), AOS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACT-150	Intro to PC Hardware	3
NACT-151	Windows Operating Systems	3
NACT-155	Introduction to Linux	3
NACT-160	Networking Essentials	3
NACT-161	Client-Server Networks	3
NACT-170	Intro to Web Development	3
NCAR-010	Freshman Seminar	0
NENG-212	NTID General Education Foundation – Career English: Career English I	3
NENG-213	NTID General Education Foundation – Career English: Career English II	3
	NTID General Education Foundation – Mathematics†	3
Second Year		
NACT-200	Help Desk Support	3
NACT-230	Introduction to Programming	3
NACT-235	Intro to Database Applications	3
NACT-240	The World of Work	3
NACT-253	Cloud Computing Concepts	3
NACT-255	A+ Certification Prep	3
NACT-295	ACT Technical Capstone	3
NACT-299	Co-op: Applied Computer Tech	0
	NTID General Education – Perspective‡	3
Third Year		
NACT-250	Computer and Data Security	3
	ACT Program Electives§	6
	NTID General Education – Perspective‡	3
Total Semester Credit Hours		**63**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† NTID mathematics course NMTH-120 or higher. It is recommended that students take NMTH-140 Mathematics in Society. Students who place above NMTH-140 can take math or a 3-credit course from any non-science perspective category.
‡ NTID General Education Perspective courses may be from any of these three Perspective categories: ASL-Deaf Cultural Studies; Communication, Social & Global Awareness; and Creative and Innovative Exploration.
§ Please see list of ACT program electives below.

Applied Computer Technology (networking and cyber security concentration), AOS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACT-150	Intro to PC Hardware	3
NACT-151	Windows Operating Systems	3
NACT-155	Non-Windows Operating Systems	3
NACT-160	Networking Essentials	3
NACT-161	Client-Server Networks	3
NACT-170	Intro to Web Development	3
NCAR-010	Freshman Seminar	0
NENG-212	NTID General Education Foundation – Career English: Career English I	3
NENG-213	NTID General Education Foundation – Career English: Career English II	3
	NTID General Education Foundation – Mathematics†	3
Second Year		
NACT-200	Help Desk Support	3
NACT-230	Introduction to Programming	3
NACT-235	Intro to Database Applications	3
NACT-240	The World of Work	3
NACT-260	LAN WAN Design	3
NACT-261	Network Security	3
NACT-295	ACT Technical Capstone	3
NACT-299	Co-op: Applied Computer Tech	0
	NTID General Education – Perspective‡	3
Third Year		
NACT-262	Fundamentals of System Administration	3
	ACT Program Electives§	6
	NTID General Education – Perspective‡	3
Total Semester Credit Hours		**63**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† NTID mathematics course NMTH-120 or higher. It is recommended that students take NMTH-140 Mathematics in Society. Students who place above NMTH-140 can take math or a 3 credit-course from any non-science perspective category
‡ NTID General Education Perspective courses may be from any of these three Perspective categories: ASL-Deaf Cultural Studies; Communication, Social & Global Awareness; and Creative and Innovative Exploration.
§ Please see list of ACT program electives below.

ACT program electives

NACC-130	Personal Finance
NACT-250	Computer and Data Security§
NACT-251	Digital Systems Integration§
NACT-252	Server Management & Security
NACT-253	Cloud Computing Concepts§
NACT-255	A+ Certification Prep§
NACT-260	LAN WAN Design†
NACT-261	Network Security†
NACT-262	Fundamentals of System Administration†
NACT-265	Network+ Certification Prep
NACT-266	Network Defense Technologies
NACT-270	Web Applications
NACT-271	Client-Side Scripting
NACT-275	Security+ Certification Prep
NAIS-130	Raster and Vector Graphics
NAIS-160	Web Design I
NBUS-200	Orientation to Business
NBUS-227	Principles of Marketing
NGRP-220	Videography

§ Students taking the NCS concentration may take this course from the CTS concentration as an elective.
† Students taking the CTS concentration may take this course from the NCS concentration as an elective.

Admission requirements

For the career-focused AOS degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

Specific English, mathematics, and science requirements and other recommendations

Successful completion of a sampling experience in applied computer technology, either through the Summer Vestibule Program or equivalent career exploration course, is a prerequisite for this program, as are the following:

- English: Placement into Career English I (NENG-212) or above. Students successfully completing the AOS degree typically enter with reading scores of 79 or higher on the NTID Reading Test and writing scores of 39 or higher on the NTID Writing Test.
- Mathematics: Placement into Mathematics in Society (NMTH-140) or a higher-level course. Typically, students entering this major will have completed at least three years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Applied Computer Technology, AS

www.rit.edu/study/applied-computer-technology-as

Brian Trager, Associate Professor
585-286-5318, Brian.Trager@rit.edu

Program overview

The associate in science (AS) in applied computer technology is an associate+bachelor's degree program designed to prepare deaf and hard-of-hearing students to enter and successfully complete a bachelor's degree in RIT's Golisano College of Computing and Information Sciences. This program is available for qualified deaf and hard of hearing students.

The associate of science degree in applied computer technology is an Associate+Bachelor's Degree Program, offered by RIT's National Technical Institute for the Deaf, that prepares students to enter and successfully complete a bachelor's degree program. The program offers you unparalleled academic support and students strengthen their skills by taking courses taught by NTID faculty.

You start with an AS is applied computer technology that provides you with the courses and credit you need to enroll in and successfully complete a bachelor's degree program. Upon completion of your AS in applied computer technology, provided you maintain a 2.8 or higher grade point average in the program, you will enroll in RIT's Golisano College of Computing and Information Sciences, where you can choose to complete a bachelor's degree in computing and information technologies, human-centered computing, or web and mobile computing.*

As a graduate of the Associate+Bachelor's Degree Program, you will be prepared for a variety of entry-level jobs in the computer support area including:

- Networking and System Administrator
- Web and Multimedia Content Developer
- Programming and Application Developer
- Wireless Data Networking Administrator

* Effective as of academic year 2018-2019 the web and mobile computing concentration in the applied computer technology AS program will not be offered. Students interested in a bachelor's degree in web and mobile computing should begin their studies through enrollment in the mobile application development AAS program.

Curriculum

Applied Computer Technology (computing and information technologies concentration), AS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-131	Discrete Mathematics (General Education)	4
NACA-160	Programming Fundamentals I	3
NACA-161	Programming Fundamentals II	3
NACA-172	Website Development	3
NCAR-010	Freshman Seminar	0
NMTH-275	Advanced Mathematics (General Education)	3
NSSA-102	Computer Systems Concepts	3
	General Education – Elective†	3
	General Education – Artistic Perspective	3
	General Education – Scientific Principles Perspective	3
Choose one of the following:		3
ISTE-110	FYW: Ethics in Computing (General Education – First Year Writing)	
UWRT-150	FYW: Writing Seminar (General Education – First Year Writing)	
Second Year		
ISTE-121	Computational Problem Solving in the Information Domain II	4
ISTE-190	Foundations of Modern Information Processing	3
ISTE-230	Introduction to Database and Data Modeling	3
ISTE-240	Web & Mobile II	3
MATH-161	Applied Calculus (General Education)	4
NSSA-220	Task Automation Using Interpretive Languages	3
NSSA-241	Introduction to Routing and Switching	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Total Semester Credit Hours		**63**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† Critical Reading and Writing (UWRT-100) may be required based on placement. Students who satisfy the placement requirement may take any General Education Elective.

Applied computer technology (human-centered computing concentration), AS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACA-160	Programming Fundamentals I	3
NACA-161	Programming Fundamentals II	3
NACA-172	Website Development	3
NCAR-010	Freshman Seminar	0
NMDE-111	New Media Design Digital Survey I‡	3
NMTH-275	Advanced Mathematics (General Education)	3
PSYC-223	Cognitive Psychology (General Education)	3
PSYC-101	Introduction to Psychology (General Education – Scientific Principles Perspective)	3
STAT-145	Introduction to Statistics I (General Education)	3
	General Education – Elective†	3
Choose one of the following:		3
ISTE-110	FYW: Ethics in Computing (WI) (General Education – First Year Writing)	
UWRT-150	FYW: Writing Seminar (General Education – First Year Writing)	
Second Year		
ISTE-121	Computational Problem Solving in the Information Domain II	4
ISTE-240	Web & Mobile II	3
ISTE-252	Foundations of Mobile Design	3
ISTE-262	Foundations of Human Centered Computing	3
PSYC-250	Research Methods I	3
STAT-146	Introduction to Statistics II (General Education)	4
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Total Semester Credit Hours		**63**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† Critical Reading and Writing (UWRT-100) may be required based on placement. Students who satisfy the placement requirement may take any General Education Elective.
‡ Raster and Vector Graphics (NAIS-130) AS/BS Section (only) may be substituted for NMDE-111.

Applied Computer Technology (web and mobile computing concentration), AS degree, typical course sequence‡

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-131	Discrete Mathematics (General Education)	4
NACA-160	Programming Fundamentals I	3
NACA-161	Programming Fundamentals II	3
NACA-172	Website Development	3
NCAR-010	Freshman Seminar	0
NMDE-111	New Media Design Digital Survey I§	3
NMTH-275	Advanced Mathematics (General Education)	3
	General Education – Elective†	3
	General Education – Artistic Perspective	3
	General Education – Scientific Principles Perspective	3
Choose one of the following:		3
ISTE-110	FYW: Ethics in Computing (General Education – First Year Writing)	
UWRT-150	FYW: Writing Seminar (General Education – First Year Writing)	
Second Year		
ISTE-121	Computational Problem Solving in the Information Domain II	4
ISTE-222	Applied Data Structures and Algorithms	3
ISTE-230	Introduction to Database and Data Modeling	3
ISTE-240	Web & Mobile II	3
ISTE-260	Designing the User Experience	3
MATH-161	Applied Calculus (General Education)	3
NSSA-290	Networking Essentials for Developers	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Total Semester Credit Hours		**62**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† Critical Reading and Writing (UWRT-100) may be required based on placement. Students who satisfy the placement requirement may take any General Education Elective.
‡ Effective as of academic year 2018-19, the web and mobile computing concentration in the applied computer technology AS program will not be offered. Students interested in a bachelor's degree in web and mobile computing should begin their studies through enrollment in the mobile application development AAS program.
§ Raster and Vector Graphics (NAIS-130) AS/BS Section (only) may be substituted for NMDE-111.

Admission requirements

For the AS degree leading to bachelor's degree (Associate+Bachelor's program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills as evidenced by application materials determine associate degree options.

Specific English and mathematics requirements and other recommendations

The following prerequisites are necessary for admission into the applied computer technology AS major:

- English: Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150).
- Mathematics: Entrance into NTID's NMTH-275 Advanced Math.
- ACT (optional): The ACT middle 50% composite score is 18-21.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Applied Liberal Arts, AS

www.rit.edu/study/applied-liberal-arts-as
Kathryn Schmitz, Associate Professor
5854756813, kls4344@ntid.rit.edu

Program overview

The associate in science (AS) degree in applied liberal arts is designed to prepare deaf and hard-of-hearing students to enter and successfully complete a bachelor's degree in RIT's College of Liberal Arts or in NTID's community development and inclusive leadership BS degree. This program is available for qualified deaf and hard of hearing students.

Applied liberal arts is an Associate+Bachelor's Degree Program, offered by RIT's National Technical Institute for the Deaf, that prepares you to enter and successfully complete a bachelor's degree. The program offers you unparalleled academic support and you will strengthen your skills by taking courses taught by NTID faculty.

By the end of the first year, you will choose a bachelor's degree you wish to enroll in after completing the AS degree. During the second year, you'll take four professional courses in your chosen major. In addition, as a part of the AS degree, you'll complete mathematics, science, and other courses to meet the graduation requirements of your major.

You'll start with an AS in applied liberal arts, which provides you with the courses and credits you need to enroll in and successfully complete a bachelor's degree program. Upon completion of your AS program, provided you earn a cumulative grade point average of 2.5 or higher, you can choose to complete a bachelor's degree in advertising and public relations, applied modern language and culture, communication, community development and inclusive leadership, criminal justice, digital humanities and social sciences, economics, international and global studies, journalism, museum studies, philosophy, political science, psychology, public policy, or sociology and anthropology.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Curriculum

Applied Liberal Arts, AS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
NMTH-250	Elementary Statistics (General Education)	3
	General Education – Scientific Principles Perspective*	3
	NTID – Mathematics Elective†	3
	NTID Liberal Arts Elective‡	3
	General Education – Electives§	6
	General Education – First Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Second Year		
	Professional Electives**	12
	General Education – Ethical Perspective	3
	General Education – Electives§	6
	General Education – Immersion 1, 2, 3	9
Total Semester Credit Hours		**60**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
* NTID science course numbered NSCI-250 or higher, or College of Science course required by chosen professional area.
† Mathematics and science courses as required by chosen professional area.
‡ Students may take NDLS-150, NDLS-200, or any NCOM, NHSS, or PRFN course.
§ Students may need to take UWRT-100 Critical Reading & Writing, depending on placement to satisfy one of the General Education Electives.
** Four courses in a College of Liberal Arts professional area of study.

Admission requirements

For the AS degree leading to bachelor's degree (Associate+Bachelor's program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills as evidenced by application materials determine associate degree options.

Specific English, mathematics, and science requirements and other recommendations

- English: Placement into Critical Reading and Writing (UWRT-100), or a First Year Writing course, such as FYW: Writing Seminar (UWRT-150).
- Mathematics: Placement into NMTH-250 or higher from NTID, RIT's College of Science, or another RIT college. Students will enroll in the mathematics course required by their prospective baccalaureate program. Typically, students entering this major will have completed at least three years of high school mathematics.
- Science: Readiness for NSCI-250 or higher from NTID, RIT's College of Science, or another RIT college. Students will enroll in the science course required by their prospective baccalaureate program. Typically, students entering this program will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 18-21.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Applied Mechanical Technology, AAS

www.rit.edu/study/applied-mechanical-technology-aas

Karen Beiter, Associate Professor
585-286-4546, kjbndp@rit.edu

Program overview

The associate in applied science (AAS) in applied mechanical technology is an Associate+Bachelor's degree program that prepares students to enter and successfully complete a bachelor's degree program in RIT's College of Engineering Technology. The program offers you unparalleled academic support and students strengthen their skills by taking courses taught by NTID faculty. This program is available for qualified deaf and hard of hearing students.

You'll start with an AAS degree in applied mechanical technology through RIT's National Technical Institute for the Deaf, which provides you with the courses and credit you need to enroll in an RIT bachelor's degree program. Upon completion of your AAS program, provided you maintain a 2.5 grade point average or higher, you will enroll in RIT's College of Engineering Technology, where you can major either in mechanical engineering technology, mechatronics engineering technology, or robotics and manufacturing engineering technology.

Students who graduate in good standing and have maintained a grade of C or better in the six "NETS" courses should be well prepared for RIT's College of Engineering Technology.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Curriculum

Applied Mechanical Technology, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-131	General Chemistry for Engineers (General Education)	3
MATH-171	Calculus A (General Education)	3
MATH-172	Calculus B (General Education)	3
NCAR-010	Freshman Seminar	0
NETS-101	Fundamentals of Engineering	3
NETS-110	Foundations of Materials	2
NETS-111	Foundations of Materials Lab	1
NETS-120	Manufacturing Processes	3
NETS-150	Mechanical Design & Fabrication	3
NETS-151	Mechanical Design & Fabrication Lab	1
PHYS-111	College Physics I (General Education – Scientific Principles Perspective)	4
UWRT-150	FYW: Writing Seminar (WI) (General Education – First Year Writing)	3
	Program Elective*	3
Second Year		
EEET-115	Circuits I	2
EEET-116	Circuits I Lab	1
MATH-211	Elements of Multivariable Calculus and Differential Equations	3
MCET-210	Foundations of Non-Metallic Materials	2
MCET-211	Characterization of Non-Metallic Materials Lab	1
MCET-220	Principles of Statics	3
Choose one of the following:		3
MCET-221	Strength of Materials	
MECA-290	Mechanics for Mechatronics	
PHYS-112	College Physics II (General Education)	4
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Total Semester Credit Hours		**64**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.

* The Program Elective in the first semester is typically based on science, mathematics, or English placement. Students may select Critical Reading & Writing (UWRT-100), Precalculus (MATH-111), Accelerated Algebra II (NMTH-272), Advanced Mathematics (NMTH-275), Concepts of College Physics (NSCI-270), or another course as determined by the department chairperson. Students who need to take precalculus can take (NMTH-272 Accelerated Algebra II or NMTH-275 Advanced Mathematics) and NMTH-220 Trigonometry to satisfy the MATH-171 Calculus A pre-requisite.

Admission requirements

For the AAS degree leading to bachelor's degree (Associate+Bachelor's program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills, as evidenced by application materials, determine associate degree options.

Specific requirements

- English: Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150) or Critical Reading and Writing (UWRT-100).
- Mathematics: Entrance into NTID's Advanced Math (NMTH-275) or higher, such as Pre-calculus (MATH-111).
- Science: Entrance into the College of Science's College Physics I (PHYS-111) course; however, students who did not take physics in high school are recommended to take a bridging physics course at NTID, such as Concepts of College Physics (NSCI-270).
- ACT (optional): The ACT middle 50% composite score is 18-21.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Architectural and Civil Drafting Technology, AAS

www.rit.edu/study/architectural-and-civil-drafting-technology-aas

Karen Beiter, Associate Professor
585-286-4546, kjbndp@rit.edu

Program overview

People who work in architectural and civil drafting technology use their skills to create two- and three-dimensional drawings on the computer. These drawings are used to visually represent buildings, bridges, canals, and houses. This program is available for qualified deaf and hard of hearing students.

The associate in applied science (AAS) in architectural and civil drafting technology, offered by RIT's National Technical Institute for the Deaf, will prepare you for a rewarding career as a CAD technician. The program provides you with the skills to become a support technician in the architecture, engineering and construction field. You might work with architects or engineers on projects such as buildings, highways, or bridges. Construction companies and building suppliers also hire CAD technicians.

CAD operators, also called CAD technicians, take the sketches of an engineer, architect, or designer and produce a set of technical drawings. In addition to a strong emphasis on computer-aided drafting, the major provides you with a background in mathematics, building systems, construction regulations, site utilities, and materials and methods used in the architecture, engineering, and construction industries.

The AAS degree in architectural and civil drafting technology prepares students to find immediate employment upon graduation or to continue their education by working towards a bachelor's degree. Transfer requirements into RIT's bachelor degree programs vary by program.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Students in the architectural and civil drafting technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Architectural and Civil Drafting Technology, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAD-108	Data Collection & Analysis	3
NCAD-112	Computing Tools for Engineering Technology	3
NCAD-150	Engineering Graphics in AEC	3
NCAD-170	Construction CAD I	3
NCAD-180	Civil Technology Graphics	3
NCAR-010	Freshman Seminar	0
NMTH-220	Trigonometry (General Education)	3
NMTH-275	Advanced Mathematics	3
	General Education – Elective*	3
	General Education – Ethical Perspective*	3
	General Education – First-Year Writing (WI)	3
Second Year		
NCAD-201	Job Search Process for CADT	3
NCAD-220	Construction CAD II	3
NCAD-230	Construction CAD III	3
NCAD-245	Energy Modeling for Sustainable Construction	3
NCAD-255	Construction Material and Methods I	3
NCAD-265	Construction Materials and Methods II	3
NCAD-275	Principles of Structural Systems	3
NCAD-285	MEP Systems	3
NCAD-299	Co-op: CADT	0
NSCI-201	Principles of Physics (General Education – Scientific Principles Perspective)	3
	General Education – Artistic Perspective*	3
Third Year		
NCAD-240	Advanced Construction CAD	3
NCAD-250	Presentation Graphics	3
	Technical Elective†	3
	General Education – Global Perspective*	3
	General Education – Social Perspective*	3
Total Semester Credit Hours		**75**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.

* An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and a General Education – Perspective or General Education – Elective.

† Choose one from the following list of courses, or another course by departmental approval, Principles of Design and Color (NAIS-120), Raster and Vector Graphics (NAIS-130), Scenic and Lighting Technology (PRFN-203), Materials of Construction (CVET-140) and Materials of Construction Laboratory (CVET-141), Surveying (CVET-160) and Surveying Laboratory (CVET-161), Theatre Practicum (Lighting [PRFN-218-02] and/or Set Construction [PRFN-218-08]), GIS Fundamentals (NCAD-280). Permission required for CVET-140, 141 and CVET-160, 161.

Admission requirements

For the career-focused AAS degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

Specific English, mathematics, and science requirements and other recommendations

- English: Placement in a First Year Writing course, such as FYW: Writing Seminar (UWRT-150). Students typically enter First Year Writing with reading scores equivalent to 130 or higher on the NTID Reading Test and writing scores of 67 or higher on the NTID Writing Test. However, students who complete AAS degrees typically enter NTID with reading scores above 98 on the NTID Reading Test and writing scores above 50 on the NTID Writing Test.
- Mathematics: Placement in Trigonometry (NMTH-220). Typically, students entering this program will have completed at least three years of high school mathematics.
- Science: Placement into Principles of Physics (NSCI-201) or a higher level course. Typically, students entering this program will have completed at least three years of high school science. High school physics would be beneficial.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Architectural and Civil Drafting Technology, AOS

www.rit.edu/study/architectural-and-civil-drafting-technology-aos

Karen Beiter, Associate Professor
585-286-4546, kjbndp@rit.edu

Program overview

People who work in architectural and civil drafting technology use their skills to create two- and three-dimensional drawings on the computer. These drawings are used to visually represent buildings, bridges, canals, and houses. This program is available for qualified deaf and hard of hearing students.

The associate in occupational studies (AOS) in architectural and civil drafting technology, offered by RIT's National Technical Institute for the Deaf, will prepare you for a rewarding career as a CAD technician. The program provides you with the skills to become a support technician in the architecture, engineering and construction field. You might work with architects or engineers on projects such as buildings, highways, or bridges. Construction companies and building suppliers also hire CAD technicians.

CAD operators, also called CAD technicians, take the sketches of an engineer, architect, or designer and produce a set of technical drawings. In addition to a strong emphasis on computer-aided drafting, the program provides you with a background in mathematics, building systems, construction regulations, site utilities, and materials and methods used in the architecture, engineering, and construction industries.

Graduates will enter businesses and industries that need technical employees with skills in computer aided drafting technology and a broad knowledge of applications and procedures. Graduates find work in a variety of settings, including engineering firms, government agencies, and architectural and construction firms. Positions for which graduates qualify include drafters/technicians for architectural, highway design, and civil environments.

The AOS degree in architectural and civil drafting technology prepares you to find immediate employment upon graduation.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Students in the architectural and civil drafting technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Architectural and Civil Drafting Technology, AOS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAD-108	Data Collection & Analysis	3
NCAD-112	Computing Tools for Engineering Technology	3
NCAD-150	Engineering Graphics in AEC	3
NCAD-170	Construction CAD I	3
NCAD-180	Civil Technology Graphics	3
NCAR-010	Freshman Seminar	0
NENG-212	NTID General Education Foundation – Career English: Career English I	3
NENG-213	NTID General Education Foundation – Career English: Career English II	3
NMTH-212	NTID General Education Foundation – Mathematics: Integrated Algebra	3
NMTH-220	Trigonometry	3
Second Year		
NCAD-201	Job Search Process for CADT	3
NCAD-220	Construction CAD II	3
NCAD-230	Construction CAD III	3
NCAD-245	Energy Modeling for Sustainable Construction	3
NCAD-255	Construction Material and Methods I	3
NCAD-265	Construction Materials and Methods II	3
NCAD-275	Principles of Structural Systems	3
NCAD-285	MEP Systems	3
NCAD-299	Co-op: CADT	0
NSCI-154	NTID General Education – Scientific Processes Perspective: Physics of Matter	3
Third Year		
NCAD-240	Advanced Construction CAD	3
NCAD-250	Presentation Graphics	3
	Technical Elective‡	3
	NTID General Education – Perspective†	3
Total Semester Credit Hours		**66**

Please see the NTID General Education Curriculum (GE) for more information.

Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.

† NTID General Education Perspective course may be from any of these three Perspective categories: ASL-Deaf Cultural Studies; Communication, Social & Global Awareness; and Creative and Innovative Exploration.

‡ Choose one from the following list of courses, or another course by departmental approval, Principles of Design and Color (NAIS-120), Raster and Vector Graphics (NAIS-130), Scenic and Lighting Technology (PRFN-203), Materials of Construction (CVET-140) and Materials of Construction Laboratory (CVET-141), Surveying (CVET-160) and Surveying Laboratory (CVET-161), Theatre Practicum (Lighting [PRFN-218-02] and/or Set Construction [PRFN-218-08]), NCAD-280 GIS Fundamentals. Permission required for CVET-140, 141 and CVET-160, 161.

Admission requirements

For the career-focused AOS degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

Specific English, mathematics and science requirements and other recommendations

Successful completion of a sampling experience either through the Summer Vestibule Program or an equivalent career exploration course is a prerequisite, as are the following:

- English: Placement into Career English I (NENG-212) or above. Students successfully completing an AOS degree typically enter with reading scores of 79 or higher on the NTID Reading Test and writing scores of 39 or higher on the NTID Writing Test.
- Mathematics: Placement into Integrated Algebra (NMTH-212) or a higher-level course. Typically, students entering this major will have completed at least three years of high school mathematics.
- Science: Placement into Physics of Matter (NSCI-154) or a higher-level course. Typically, students entering this major will have completed at

least three years of high school science. High school physics would be beneficial.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

ASL-English Interpretation, BS

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Keith Cagle, Associate Professor
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Program overview

The ASL-English interpretation major prepares sign language interpreters for work in settings where deaf, hard-of-hearing, and hearing people interact and communicate. This degree allows students to develop foundation skills for general interpreting, with opportunities to explore specialized fields such as those in educational and medical settings, and/or community interpreting.

The program is accredited through the Commission on Collegiate Interpreter Education and is one of only 16 accredited bachelor's degree interpreting programs in the United States.

The bachelor of science degree program in American Sign Language (ASL)–English interpretation provides specialized preparation for you to develop interpreting skills as well as practical experience and course work. The program is designed to provide graduates with a solid foundation on which to develop the skills needed to pass the National Interpreter Certification exam offered through the Registry of Interpreters for the Deaf or the Educational Interpreting Performance Assessment.

Interpreting students enjoy small class sizes and one-on-one discussions and advisement with knowledgeable faculty. By keeping classes small, our instructors are able to focus on you, building your strengths and developing your skills. Faculty and staff members work with you on all aspects of interpreting. As an interpreting student, you will have practicum experiences which provide the opportunity to work with a professional interpreter acting as a mentor in a college, school, or in the community. These practicums give you real-world experiences as an interpreter. There is no better place to prepare for a career in sign language interpreting than at the National Technical Institute for the Deaf (NTID).

To succeed in this program, students must be able to understand a speaker who is behind them; understand a speaker who is far away; focus on what a speaker is saying in a noisy room; and understand recorded voices through headphones. To see a list of the major skills and abilities needed to study sign language interpreting, see "Is Interpreting the Career for Me".

Why Should You Pursue Your Interpreting Degree at RIT/NTID?

- More than 1,100 Deaf and hard-of-hearing students live, study and socialize on the RIT campus with more than 8,000 hearing students, providing interpreting students like you with excellent opportunities to interact with students and enhance your language and interpreting skills as well as your experience with Deaf culture.
- The faculty of NTID's Department of American Sign Language and Interpreting Education are nationally respected interpreter educators. All of our American Sign Language classes are taught by Deaf faculty members who are certified by the American Sign Language Teachers Association, and all of our interpreting instructors are certified as sign language interpreters by the Registry of Interpreters for the Deaf and are active in the Conference of Interpreter Trainers.
- Our labs are state-of-the-art facilities with a wealth of interpreting and sign language materials.
- RIT/NTID receives special federal support for students in the interpreting program, you pay less than one-half of RIT's regular tuition rate.

- You have access to more than 100 interpreters on campus and more than 300 off campus in the Rochester community.
- Rochester has one of the largest concentrations of Deaf and hard-of-hearing residents in the United States. As an interpreting student at RIT/NTID, there are many opportunities for you to interact with Deaf and hard-of-hearing people, including numerous Deaf student clubs and sports, the Rochester Recreation Club for the Deaf, Deaf theater and much more. Deaf culture programs also are held throughout the year on campus and at various venues in the community.
- Rochester is home to a local chapter of the Registry of Interpreters for the Deaf, which offers many skill development workshops.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Curriculum

ASL-English Interpretation, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
INTP-125	American Sign Language II (General Education)	4
INTP-126	American Sign Language III (General Education)	4
INTP-210	Introduction to the Field of Interpreting	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Mathematical Perspective A	3
	General Education – Mathematical Perspective B	3
	General Education – First-Year Writing (WI)	3
Second Year		
INTP-215	Processing Skills Development	3
INTP-225	American Sign Language IV	3
INTP-226	American Sign Language V	3
MLAS-351	Linguistics of American Sign Language (General Education)	3
	Deaf Cultural Studies Elective † (General Education)	3
	General Education – Elective	3
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective ‡	4
	General Education – Scientific Principles Perspective	3
	Open Elective	3
Third Year		
INTP-310	Interpreting I	3
INTP-315	Practical and Ethical Applications	3
INTP-325	American Sign Language VI	3
INTP-326	American Sign Language VII	3
INTP-335	Interpreting II: English to ASL	3
INTP-336	Interpreting II: ASL to English	3
	General Education – Immersion 1	3
	General Education – Elective	3
	Open Elective	6
Fourth Year		
INTP-350	Practicum and Seminar I	3
INTP-435	Interpreting III: English to ASL	3
INTP-436	Interpreting III: ASL to English	3
INTP-455	Practicum II	4
INTP-456	Seminar II	2
INTP-460	Issues in Interpreting (WI-PR)	3
	Open Elective	3
	Professional Elective	3
	General Education – Immersion 2,3	9
Total Semester Credit Hours		**123**

Please see General Education Curriculum (GE) for more information.
(WI-PR) refers to writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking a 4-credit hour lab science course. Students may select one of the lab science courses listed below to fulfill this requirement. Both the lecture and the laboratory sections must be taken. Human Biology I (MEDG-101) and Human Biology Lab I (MEDG-103), Human Biology II (MEDG-102) and Human Biology Lab II (MEDG-104), Field Biology (BIOG-110), General Biology I (BIOL-101) and General Biology Lab I (BIOL-103), General Biology II (BIOL-102) and General Biology Lab II (BIOL-104), Introductory Biology I (BIOL-121), Introductory Biology II (BIOL-122), General-Organic-Biochemistry I (CHMG-111), College Physics I (PHYS-111), College Physics II (PHYS-112).

† Deaf Cultural Courses

ENGL-417	Deaf Literature
HIST-230	American Deaf History
HIST-231	Deaf People in Global Perspective
HIST-330	Deafness and Technology
HIST-333	Diversity in the Deaf Community
HIST-335	Women and the Deaf Community
LEAD-203	Foundation of Dialogue: Black Deaf Experiences
LEAD-305	International Deaf Leadership and Community Development
LEAD-306	Leadership in the Deaf Community
LEAD-311	Dialogue: Deaf, DeafBlind, DeafDisabled, Hard-of-Hearing
MLAS-352	American Sign Language Literature
NHSS-251	Deaf Cultural and Contemporary Civilizations
NHSS-275	Visual Expressions of Deaf Culture
PRFN-214	Appreciation of Artistic Sign Language
PRFN-314	ASL Musicality
PRFN-413	History of Deaf Performance
PRFN-414	Theatrical Translation
SOCI-240	Deaf Culture in America
VISL-440	Deaf Art & Cinema

Accreditation

The BS degree in ASL-English Interpretation is accredited by the Commission on Collegiate Interpreter Education.

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected
- 3 years of social studies and/or history
- 3-4 years of math
- 2-3 years of science
- Must demonstrate competency to begin at ASL II

For those applicants who have had college experience, college transcripts should document a GPA of 3.0 or better, with evidence of very good performance in English courses. A writing sample will be judged on vocabulary, grammar, structure, style, and creativity.

Transfer Admission

Transfer course recommendations without associate degree

Transfer requirements vary by program

Appropriate associate degree programs for transfer

Transfer requirements vary by program.

Please note: In addition to RIT's general admissions procedures, the ASL-English interpretation major requires applicants to complete additional admission materials from the NTID Admissions Office.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Business Administration, AAS

www.rit.edu/study/business-administration-aas

Mark Pfuntner, Associate Professor
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Program overview

The business administration program focuses on general business operations and the critical decision-making process required for success in today's fast-paced work environment. You will learn the fundamentals of business planning, communication, and critical decision-making skills–all essential, high-growth skills for the jobs of the future. This program is available for qualified deaf and hard of hearing students.

AAS in Business Administration: Online or On-Campus

The business administration program, offered by RIT's National Technical Institute for the Deaf, blends practical business experiences with theory and teaches you how to apply these concepts in actual business situations through case studies, interactive sessions, and cooperative education work experience. This degree prepares deaf and hard-of-hearing students to enter the workforce immediately following graduation, and is ideal for deaf and hard-of-hearing working professionals who would like to advance their career by enhancing their skills with a degree from this nationally recognized university. While this associate degree is a stand-alone credential valued by employers, qualified students can choose to continue their education.

This degree is for students contemplating careers in marketing, sales, retail, advertising, banking, management, human resources, hospitality, and other related fields. You'll receive leadership training in addition to becoming proficient in the use of computer software applications necessary to succeed in the business world. Decision-making skills will be stressed throughout the program as well as consensus-building skills that support working in team situations.

Business administration is available as an associate in applied science (AAS) degree or as an Associate+Bachelor's Degree Program.

The AAS degree in business administration is a career-focused degree program that leads to immediate entry into well-paying careers at the paraprofessional or technician level.

The Associate+Bachelor's Degree Program in business administration prepares you to complete an RIT bachelor's degree. In this option, upon successful completion of the AAS degree in business administration, provided you maintain a 2.5 or higher grade point average in the program, you will enroll into RIT's School of Individualized Study, where you can pursue a bachelor's degree in applied arts and science.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Why Study An Online Degree with RIT/NTID?

- NTID mission—The primary mission of NTID is to provide deaf and hard-of-hearing students with outstanding state-of-the-art technical and professional education programs, complemented by a strong arts and sciences curriculum that prepare you to live and work in the mainstream of a rapidly changing global community while enhancing your lifelong learning.
- NTID faculty—Many NTID faculty are deaf or hard of hearing, have years of higher education experience teaching deaf and hard-of-hearing learners, and have specialized experience in their professional fields from working in business and industry.

- High-quality accessible educational materials and technologies—NTID uses a variety of strategies to make the online learning environment as flexible and accommodating as possible to ensure access, participation, and progress for all deaf and hard-of-hearing learners. Most video instructional materials include ASL interpretation and all videos include captions.
- Outstanding academic support services—Academic tutoring is available online from your instructors and from qualified tutors familiar with course content and sign language.
- Personal and career counseling services—Academic advising, personal counseling, and career counseling are provided to all deaf and hard-of-hearing students by the NTID Counseling and Academic Advising Services (CAAS). Every enrolled student receives an assigned NTID academic advisor/counselor to support their personal and academic success.
- Access and accommodation services—NTID's Department of Access Services provides interpreters and captionists for in-person classes and Zoom meetings. Students with secondary disabilities also can receive academic accommodations from RIT'sDisability Services Office.
- Required cooperative work experience—This tuition-free, paid career experience provides you with on-the-job training and work experience in your field prior to graduation. NTID's Center on Employment assists deaf and hard-of-hearing students with their job search and works with employers to facilitate hiring after graduation.
- Job Placement Rate—95% of deaf and hard-of-hearing students who seek jobs after graduation find one within a year.

Microsoft Certification

NTID's business studies department operates an authorized testing center for Microsoft Office Specialist. Preparatory courses are offered for several exams each semester.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the business administration program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Business Administration, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACC-130	Personal Finance	3
NACC-201	Accounting 1	3
NACT-170	Intro to Web Development	3
NAST-160	Fundamentals of Spreadsheet Applications	3
NBUS-200	Orientation to Business	3
NBUS-217	Fundamentals of Management	3
Choose one of the following		0
NCAR-010	Freshman Seminar	
NCAR-015	Strategies for Successful Online Learners**	
UWRT-150	FYW: Writing Seminar (WI) (General Education – First-Year Writing)	3
	General Education – Elective‡	3
	General Education – Elective†	3
	General Education – Scientific Principles Perspective	3
Second Year		
NACC-202	Accounting 2	3
NAST-210	Essentials of Business Communication	3
NAST-220	Fundamentals of Database Applications	3
NBUS-213	Applied Ethics	3
NBUS-221	Essentials of Human Resource Management	3
NBUS-223	Fundamentals of Marketing	3
NBUS-224	Business Law	3
NBUS-226	Introduction to Organizational Behavior	3
NBUS-299	Co-op: Business Administration	0
	General Education – Global Perspective‡	3
	General Education – Social Perspective‡	3
Third Year		
NBUS-220	Introduction to Economics	3
NBUS-228	Leadership Essentials	3
	General Education – Ethical Perspective‡	3
	General Education – Artistic Perspective‡	3
	Open Elective‡	3
Total Semester Credit Hours		**75**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
** This course is required for NTID students accepted into this online-degree programs and is a substitute for NCAR-010 Freshman Seminar.
† Must be a General Education Elective course NMTH-140 or higher.
‡ An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and a General Education - Perspective or General Education - Elective or it can be used to fulfill an Open Elective.

Admission requirements

For the career-focused AAS degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

For the AAS degree leading to bachelor's degree (Associate+Bachelor's program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills as evidenced by application materials determine associate degree options.

Specific English, mathematics, and science requirements and other recommendations

- English: Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150). Students who qualify for Critical Reading and Writing (UWRT-100) will be considered for admission if they are at NMTH-250 or higher in mathematics.
- Mathematics: Placement into mathematics NMTH-140 or higher. Typically, students entering this major will have completed at least three years of high school mathematics.
- Science: Placement into science NSCI-250 or higher. Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): For the Career-Focused AAS degree, the ACT middle 50% composite score is 14-17. For the Associate+Bachelor AAS degree, the ACT middle 50% composite score is 18-21.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Business, AS

www.rit.edu/study/business-as

Mark Pfuntner, Associate Professor
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Program overview

The associate in science (AS) degree in business is an Associate+Bachelor's degree program designed to prepare deaf and hard-of-hearing students to enter and successfully complete a bachelor's degree program in RIT's Saunders College of Business. The program offers you unparalleled academic support and students strengthen their skills by taking courses taught by faculty in RIT's National Technical Institute for the Deaf (NTID). Admission to this major is available during the fall semester only. This program is available for qualified deaf and hard of hearing students.

You'll start with an AS degree in business, which provides you with the courses and credits you need to enroll in an RIT bachelor's degree program.

Upon completion of your AS program, provided you have earned a 2.5 or higher cumulative grade point average in the program, you will enroll into RIT's Saunders College of Business in one of the following bachelor's degree programs: accounting, finance, hospitality and tourism management, international business, management, management information systems, marketing, or supply chain management.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Microsoft Certification

NTID's business studies department operates an authorized testing center for Microsoft Office Specialist. Preparatory courses are offered for several exams each semester.

Curriculum

Business, AS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MGIS-101	Computer-based Analysis	1
NBUS-211	World of Business & Innovation	3
NBUS-225	Introduction to Entrepreneurship	3
NBUS-227	Principles of Marketing	3
NCAR-010	Freshman Seminar	0
STAT-145	Introduction to Statistics I (General Education)	3
STAT-146	Introduction to Statistics II (General Education)	4
	General Education – First Year Writing (WI)	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Scientific Principles Perspective*	3
	General Education – Elective	3
Second Year		
COMM-253	Communication	3
ECON-101	Principles of Microeconomics	3
ECON-201	Principles of Macroeconomics	3
INTB-225	Global Business Environment	3
MATH-161	Applied Calculus (General Education)	4
MGMT-215	Organizational Behavior	3
NACC-205	Financial Accounting	3
NACC-206	Managerial Accounting	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Total Semester Credit Hours		**63**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
* Any science course numbered NSCI-250 or higher may fulfill this requirement.

Accreditation

Undergraduate and graduate programs in Saunders College of Business are accredited by the Association to Advance Collegiate Schools of Business (AACSB) International, the premier accrediting organization for business schools.

Admission requirements

For the AS degree leading to bachelor's degree (Associate+Bachelor's program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills as evidenced by application materials determine associate degree options.

Specific English, mathematics, and science requirements and other recommendations

- English: Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150). Students who qualify for Critical Reading and Writing (UWRT-100) will be considered for admission if they are at NMTH-250 or higher in mathematics.
- Mathematics: Placement into mathematics NMTH-250 or higher. Typically, students entering this major will have completed at least three years of high school mathematics.
- Science: Placement into science NSCI-250 or higher. Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 18-21.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Business Technology, AOS

www.rit.edu/study/business-technology-aos

Mark Pfuntner, Associate Professor
585-286-4640, mjpnvd@ntid.rit.edu

Program overview

The business technology program prepares you for a career in general business operations. You'll learn the fundamentals of business planning, interpersonal skills, and communication skills needed to succeed on the job. You'll also receive leadership training in addition to becoming proficient in the use of computer software applications necessary to succeed in the business world. This degree is for students interested in the fields of marketing, sales, retail, advertising, banking, management, human resources, hospitality, and other related business disciplines. This program is available for qualified deaf and hard of hearing students.

The associate in occupational studies (AOS) in business technology, offered by RIT's National Technical Institute for the Deaf, will prepare you for a career in a variety of settings, including business, industry, government, and schools. You will take courses in accounting, payroll procedures, general office procedures, and document preparation, and you may also elect to complete a sequence of courses that provide a concentration in either accounting technology or administrative support technology.

This is a non-transfer occupational program, with primary emphasis on preparation for immediate employment upon graduation.

Microsoft Certification

NTID's business studies department operates an authorized testing center for Microsoft Office Specialist. Preparatory courses are offered for several exams each semester.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the business technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Business Technology (administrative support technology option), AOS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACC-130	Personal Finance	3
NACC-201	Accounting 1	3
NAST-140	Essential Document Production	3
NAST-150	Advanced Document Production	3
NAST-160	Fundamentals of Spreadsheet Applications	3
NBUS-200	Orientation to Business	3
NCAR-010	Freshman Seminar	0
NENG-212	NTID General Education Foundation – Career English: Career English I	3
NENG-213	NTID General Education Foundation – Career English: Career English II	3
	NTID General Education Foundation – Mathematics†	3
Second Year		
NAST-210	Essentials of Business Communication	3
NAST-215	Integrated Document Production	3
NAST-220	Fundamentals of Database Applications	3
NAST-225	Fundamentals of Graphic Applications	3
NAST-240	Administrative Support Technology Seminar	3
NAST-299	Co-op: Administrative Support Technology/Business Technology	0
NBUS-213	Applied Ethics	3
NBUS-217	Fundamentals of Management	3
	NTID General Education – Perspective‡	3
Third Year		
NAST-230	Fundamentals of Desktop Publishing	3
NBUS-223	Fundamentals of Marketing	3
	NTID General Education – Perspective‡	3
	Open Elective	3
Total Semester Credit Hours		**63**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information.
† Any mathematics course numbered NMTH-140 or higher. Students who place above NMTH-140 can take math or a 3-credit course from any non-science perspective category.
‡ NTID General Education Perspective courses may be from any of these three Perspective categories: ASL-Deaf Cultural Studies; Communication, Social & Global Awareness; and Creative and Innovative Exploration.

Business Technology (accounting technology option), AOS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACC-130	Personal Finance	3
NACC-201	Accounting 1	3
NAST-140	Essential Document Production	3
NAST-150	Advanced Document Production	3
NAST-160	Fundamentals of Spreadsheet Applications	3
NBUS-200	Orientation to Business	3
NCAR-010	Freshman Seminar	0
NENG-212	NTID General Education Foundation – Career English: Career English I	3
NENG-213	NTID General Education Foundation – Career English: Career English II	3
	NTID General Education Foundation – Mathematics†	3
Second Year		
NACC-202	Accounting 2	3
NACC-203	Accounting 3	3
NACC-299	Co-op: Accounting Technology/Business Technology	0
NAST-210	Essentials of Business Communication	3
NAST-215	Integrated Document Production	3
NAST-220	Fundamentals of Database Applications	3
NBUS-213	Applied Ethics	3
NBUS-217	Fundamentals of Management	3
	NTID General Education – Perspective‡	3
Third Year		
NACC-204	Accounting Capstone	3
NBUS-223	Fundamentals of Marketing	3
	NTID General Education – Perspective‡	3
	Open Elective	3
Total Semester Credit Hours		**63**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information.
† Any mathematics course numbered NMTH-140 or higher. Students who place above NMTH-140 can take math or a 3-credit course from any non-science perspective category.
‡ NTID General Education Perspective courses may be from any of these three Perspective categories: ASL-Deaf Cultural Studies; Communication, Social & Global Awareness; and Creative and Innovative Exploration.

Admission requirements

For the career-focused AOS Degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

Specific English, Mathematics, and Science Requirements and other Recommendations

- English: Placement into Career English I (NENG-212) or above. Students successfully completing AOS degrees typically enter with reading scores of 79 or higher on the NTID Reading Test and writing scores of 39 or higher on the NTID Writing Test.
- Mathematics: Math course (NMTH-140) or higher is required. Typically, students entering this major will have completed at least two years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Career Exploration Studies, Undeclared

www.rit.edu/study/career-exploration-studies
Kiersten Blankley,
585-475-5285, kesnhd@rit.edu

Program overview

The career exploration studies program supports deaf and hard-of-hearing students who are undecided about which program of study to pursue. It allows them to collect information about associate degree programs in the National Technical Institute for the Deaf (NTID) and career paths as they work toward entering a major.

This option allows students the opportunity to do an intensive career search while they develop a better understanding of themselves through career and personal counseling; intensive sampling of various majors at RIT/NTID; use of a computer guidance program in the Career Resource and Testing Center; interest testing; and interpretation of aptitude, ability, and achievement tests. In addition, students take courses in mathematics, English, and other liberal arts and sciences. Some students also take introductory courses in specific programs of study and are involved in extracurricular or other college-oriented activities.

A counselor/academic advisor is assigned to help you evaluate the information and make career decisions. You can remain in the career exploration studies program for up to two academic semesters.

Curriculum

Career Exploration Studies, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
Choose one of the following:		3
NCOM-120	Problem Solving	
NCOM-206	Effective Teams	
	Introductory Course in major	9
	English*	6
	Math*	6
Choose two of the following:		6
	English*	
	General Education Perspective Course	

* Specific course based on placement testing.

Career Foundation, Undeclared

www.rit.edu/study/career-foundation
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Program overview

The career foundation program supports deaf and hard-of-hearing students who need additional academic preparation to be ready for their chosen program of study. It also allows them to collect information about associate degree programs in the National Technical Institute for the Deaf (NTID) and career paths as they work toward entering a major.

This option allows students the opportunity to do an intensive career search while they develop a better understanding of themselves through career and personal counseling; intensive sampling of various majors at RIT/NTID; use of a computer guidance program in the Career Resource and Testing Center; interest testing; and interpretation of aptitude, ability, and achievement tests. In addition, students take courses in mathematics, English, and other liberal arts and sciences. Some students also take introductory courses in specific programs of study and are involved in extracurricular or other college-oriented activities.

A counselor/academic advisor is assigned to help you evaluate the information and make career decisions. You can remain in the career foundation program for up to two academic semesters.

Curriculum

Career Foundation, Typical Course Sequence

First Year		
Choose one of the following:		6
	English * †	
	General Education - Perspective Course	
Choose one of the following:		3
NCOM-120	Problem Solving	
NCOM-206	Effective Teams *	
NCAR-010	Freshman Seminar	0
	English * †	6
	Math * †	6
	Introductory Course in a major	3-9
Total Semester Credit Hours		**24-30**

*Specific course is based on placement testing.

† The second course should be the next in the sequence after the Fall course.

Civil Technology, AAS

www.rit.edu/study/civil-technology-aas

Karen Beiter, Associate Professor
585-286-4546, kjbndp@rit.edu

Program overview

The associate in applied science (AAS) in civil technology is an Associate+Bachelor's degree program that prepares students to enter and successfully complete a bachelor's degree program in civil engineering technology in RIT's College of Engineering Technology. The program offers you unparalleled academic support and students strengthen their skills by taking courses taught by NTID faculty. This program is available for qualified deaf and hard of hearing students.

Students receive a comprehensive foundation in civil engineering fundamentals: engineering graphics, computer aided design applications, construction materials and methods, surveying, statics, strength of materials, and elements of building construction.

You'll start with an AAS degree in civil technology in RIT's National Technical Institute for the Deaf, which provides you with the courses and credit you need to enroll in a bachelor's degree program.

Upon completion of your AAS program with a 2.5 or higher grade point average in the program, you will enroll in RIT's College of Engineering Technology, where you can major in civil engineering technology.

Students must graduate in good standing to enroll in the College of Engineering Technology. Transfer credit will be awarded for courses completed with a grade of B or better for courses coded "NCAD" and "NMTH" and a grade of C or better for other courses.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Curriculum

Civil Technology, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
MATH-171	Calculus A	3
NCAD-150	Engineering Graphics in AEC	3
NCAD-180	Civil Technology Graphics	3
NCAD-255	Construction Materials and Methods I	3
NCAR-010	Freshman Seminar	0
NMTH-275	Advanced Mathematics (General Education)	3
PHYS-111	College Physics I (General Education – Scientific Principles Perspective)	4
UWRT-150	FYW: Writing Seminar (WI) (General Education – First Year Writing)	3
	Program Elective	3
	General Education – Elective	3
	General Education – Ethical Perspective	3
Second Year		
CHMG-141	General & Analytical Chemistry I	3
CHMG-145	General & Analytical Chemistry I Lab	1
CVET-160	Surveying	3
CVET-161	Surveying Laboratory	1
CVET-170	Elements of Building Construction	3
MATH-172	Calculus B	3
MCET-220	Principles of Statics	3
MCET-221	Strength of Materials	3
PHYS-112	College Physics II	4
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Total Semester Credit Hours		**64**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.

Admission requirements

For the AAS Degree Leading to Bachelor's Degree (Associate+Bachelor's Program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills, as evidenced by application materials, determine associate degree options.

Specific English, Mathematics and Science Requirements and other Recommendations

- English: Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150) or Critical Reading and Writing (UWRT-100).
- Mathematics: Placement into NTID's Advanced Math (NMTH-275) course or higher
- Science: Readiness after a single NTID science course, Concepts of College Physics (NSCI-270), for entry into RIT's College of Science Physics I (PHYS-111) course.
- ACT (optional): The ACT middle 50% composite score is 18-21 (20 Math, 16 Reading).

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Community Development and Inclusive Leadership, BS

www.rit.edu/study/community-development-and-inclusive-leadership-bs
Kathryn Schmitz, Associate Professor
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Program overview

RIT's Community Development and Leadership Degree

RIT's community development and leadership degree is an innovative, interdisciplinary program that will provide you with leadership, interpersonal communication, research, and data management skills—all of which are needed by dynamic leaders at the helm of 21st century organizations.

The community leadership development program ensures that you will develop the skills and capabilities you will need to lead and manage communities and not-for-profit organizations, advocacy groups, and other entities. You will learn to:

- Identify and analyze traits, skills, communication styles, and best practices of domestic, international, historical, and modern-day community leaders
- Examine personal leadership strengths and weaknesses
- Learn and apply qualitative and quantitative research methods to help identify and address community needs, develop and implement strategies, and assess outcomes
- Recognize and value multicultural, accessible, and inclusive community members and groups
- Determine strategies for dialoguing, identifying, and addressing social justice issues, concerning ability, race, gender, class, religion, sexual orientation, and gender identity within different communities
- Identify and utilize best leadership practices in individual, group, and social media communication skills to advance community inclusion, consensus, and productivity
- Integrate grant writing and grant management skills into development of community strategic planning
- Apply core theoretical foundations of inclusive leadership and community development to a variety of government, education, business, and not-for-profit agencies

You may also customize your course work by choosing one of six concentrations to further develop your knowledge and expertise in a particular area of community management, engagement, or concern. Concentrations are available in:

- Business management
- Community health
- Deaf leadership
- Political science
- Psychology
- Public policy

The community development and inclusive leadership degree is a multidisciplinary major offered by RIT's National Technical Institute for the Deaf, and in partnership with Saunders College of Business, the College of Liberal Arts, the College of Health Sciences and Technology, and the School of Individualized Study. All students (hearing, deaf, and hard of hearing) are invited to apply.

Additional information is available in the Community Development and Inclusive Leadership Program Handbook.

Careers In Community Development and Leadership

You will be prepared to assume entrepreneurial, managerial, and advocacy leadership roles in government, public, private, and educational organizations. You will graduate with a leadership e-portfolio that demonstrates qualitative and quantitative research acumen, grant writing and leadership experience, multicultural competency, and social media management skills as well as a strong foundation in leadership theory and best practices in community development. These transferable and sought-after skills will ensure that you will have success in the workforce or in an advanced graduate program.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education and Internships

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Students in the BS in community development and inclusive leadership are strongly encouraged to participate in cooperative education and internships.

Curriculum

Community Development and Inclusive Leadership, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
LEAD-101	Introduction to Community Leadership and Development (General Education - Social Perspective)	3
LEAD-102	Inclusive Leadership	3
LEAD-103	Introduction to Intersectionality	3
Choose one of the following:		3
NMTH-250	Elementary Statistics (General Education - Mathematical Perspective A)	
STAT-145	Introduction to Statistics I (General Education - Mathematical Perspective A)	
UWRT-150	FYW: Writing Seminar (General Education - First Year Writing)	3
YOPS-010	RIT 365: RIT Connections	0
	General Education - Artistic Perspective	3
	General Education - Scientific Principles Perspective	3
	General Education - Elective	9
Second Year		
LEAD-200	Dimensions for Ethical Community Leadership (General Education - Ethical Perspective)	3
LEAD-201	Shaping Educational and Legal Policy (General Education)	3
LEAD-203	Foundation of Dialogue: Black Deaf Experiences	3
	LEAD Concentration Course	3
	General Education - Global Perspective	3
	General Education - Natural Science Inquiry Perspective	3
	General Education - Mathematical Perspective B	3
	General Education - Elective	3
	General Education - Immersion 1, 2	6
Third Year		
LEAD-350	Introduction to Qualitative Research	3
LEAD-351	Introduction to Quantitative Research	3
LEAD-500	Experiential Learning in Community Development and Inclusive Leadership	0
NAST-220	Fundamentals of Database Applications	3
	LEAD Concentration Course 2, 3, 4, 5	12
	General Education - Elective	3
	Open Electives	6
Fourth Year		
LEAD-501	Capstone Seminar (WI)	3
	LEAD Concentration Course 6, 7, 8, 9	12
	General Education - Immersion 3	3
	General Education - Electives	6
	Open Electives	6
Total Semester Credit Hours		**120**

The proposed curriculum outline provides an overview of the course work/topic areas in this new program and is subject to change.
Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Concentrations

Deaf Leadership

FNRT-355	Fundraising, Grant Writing, & Marketing for Nonprofit Institutions
LEAD-300	Rhetoric of Leadership
LEAD-301	Social Media Communication and Leadership
LEAD-302	Community Development in Athletics
LEAD-303	Literatures of Intersectionality
LEAD-304	Conflict Resolution: Negotiation and Mediation
LEAD-305	International Deaf Leadership and Community Development
LEAD-306	Leadership in the Deaf Community
LEAD-307	Leadership & Accessible Tech
LEAD-308	Current Trends in Community Development and Leadership
LEAD-309	Dialogue: Race and Ethnicity
LEAD-310	Dialogue: Gender
LEAD-311	Dialogue: Deaf, DeafBlind, DeafDisabled, Hard-of-Hearing
LEAD-312	Dialogue: LGBTQIA
LEAD-313	Dialogue: Social Class

Business Management Concentration

ACCT-110	Financial Accounting
NACC-205	Financial Accounting
ACCT-210	Management Accounting
NACC-206	Managerial Accounting
DECS-310	Operations Management
MGMT-215	Organizational Behavior
MGMT-310	Leading High-Performance Teams
MGMT-320	Organizational Effectiveness Skills
MGIS-130	Information Systems & Technology
MGIS-330	Systems Analysis and Design
MGIS-320	Database Management Systems
MGIS-350	Developing Business Applications
MGIS-450	Enterprise Systems
MKTG-230	Principles of Marketing
NBUS-227	Principles of Marketing
MKTG-320	Global Marketing
MKTG-350	Consumer Behavior
MKTG-360	Professional Selling
MKTG-370	Advertising and Promotion Management
MKTG-410	Search Engine Marketing and Analytics

Public Policy Concentration

FNRT-355	Fundraising, Grant Writing & Marketing for Nonprofit Institutions
PUBL-201	Ethics, Values & Public Policy
PUBL-301	Public Policy Analysis
PUBL-363	Cyber Security Policy and Law
PUBL-510	Technological Innovation and Public Policy
PUBL-520	Information & Communications Policy
PUBL-530	Energy Policy
PUBL-531	Climate Change: Science, Technology and Policy
PUBL-589	Topics in Public Policy
STSO-201	Science and Technology Policy
STSO-341	Biomedical Issues: Science and Technology
STSO-421	Environmental Policy

Community Health Concentration

ANTH-435	The Archaeology of Death
COMM-344	Health Communication
CRIM-245	Prostitution and Vice
CRIM-275	Crime and Violence
HLTH-315	Reinventing Health Care
HLTH-320	Legal Aspects of Health Care
HLTH-325	Health Care Leadership
HLTH-330	Health Planning And Program Development
FNRT-355	Fundraising, Grant Writing & Marketing for Nonprofit Institutions
PSYC-221	Psychological Disorders
PSYC-221H	Honors Psychological Disorders
PSYC-231	Death and Dying
PSYC-241	Health Psychology
SOCI-102	Foundations of Sociology
SOCI-246	Gender and Health
ANTH-246	Gender and Health
SOCI-322	Health and Society
STSO-341	Biomedical Issues: Science and Technology

Political Science Concentration

FNRT-355	Fundraising, Grant Writing & Marketing for Nonprofit Institutions
POLS-110	American Politics
POLS-120	Introduction to International Relations
POLS-215	Tech, Ethics & Global Politics
POLS-250	State & Local Politics
POLS-290	Politics and the Life Sciences
POLS-295	Cyberpolitics
POLS-305	Political Parties and Voting
POLS-310	The Congress
POLS-320	American Foreign Policy
POLS-325	International Law and Organizations
POLS-330	Human Rights in Global Perspective
POLS-333	The Rhetoric of Terrorism
POLS-355	Political Leadership
POLS-365	Anarchy, Technology & Utopia

sychology Concentration

Required Courses	
Choose one of the following:	
PSYC-101	Introduction to Psychology
PSYC-101H	Honors Introduction to Psychology
Choose one of the following:	
PSYC-221	Psychological Disorders
PSYC-221H	Honors Psychological Disorders
PSYC-223	Cognitive Psychology
PSYC-226	Developmental Psychology
Electives	
FNRT-355	Fundraising, Grant Writing & Marketing for Nonprofit Institutions
POLS-250	State & Local Politics
POLS-310	The Congress
POLS-355	Political Leadership
PUBL-201	Ethics, Values & Public Policy
PUBL-520	Information & Communication Policy

Admission requirements

All students (hearing, deaf, and hard of hearing) are invited to apply for the program. Hearing students accepted into the program will be in the Deaf Leadership concentration. All hearing students will be required to complete a Sign Language Proficiency Interview (SLPI) assessment. Once your application and other required materials have been submitted, your assigned counselor will work with you to schedule the SLPI. Deaf and hard-of-hearing students do not need to complete the SLPI assessment.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English with a strong performance is expected.
- 3 years of social sciences with a strong performance is expected.
- 3-4 years of math
- 2-3 years of science
- ASL fluency is required for hearing students applying to the Deaf Leadership track.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, science, foreign language, and history

Appropriate associate degree programs for transfer

Liberal arts, with social sciences, sciences, or languages

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Deaf Cultural Studies-American Sign Language, Certificate

www.rit.edu/study/deaf-cultural-studies-american-sign-language-certificate

Leisa Boling, Assistant Professor
lrbnss@rit.edu

Program overview

The Deaf cultural studies-American Sign Language certificate offers deaf, hard-of-hearing, and hearing students the opportunity to understand the deaf community as an entity unto itself and within the context of society as a whole.

Knowledge, skills, and abilities learned through this program of study include: understanding the structure of ASL and the application of linguistic principles to other languages (specifically English); enhancement of bilingual skills to improve communication; increased knowledge of Deaf culture and Deaf history; a heightened sense of self-concept, self-esteem, and self-confidence; improved presentation skills; and enhanced literacy and critical thinking skills.

The certificate in Deaf cultural studies/ASL is offered to students enrolled in degree programs at RIT's National Technical Institute for the Deaf (NTID) and the other RIT colleges as an enhancement to their portfolio of general academic, career, and technical skills. It is not a stand-alone certification. The certificate offers you an opportunity to learn about historical, anthropological, linguistic, literary, artistic, and multicultural aspects of deaf people's lives. Courses expose you to a breadth and depth of topics in Deaf cultural studies and ASL, and address NTID General Education goals for critical thinking, writing, and public presentations.

The overall program goals of the Deaf cultural studies/ASL certificate are to:

- study the Deaf experience from the perspective of a disenfranchised minority group
- understand and appreciate Deaf culture
- promote the development of English and ASL literacy
- promote the development of critical thinking skills
- promote the development of communication skills

Curriculum

Deaf Cultural Studies - American Sign Language, certificate, typical course sequence

COURSE		SEMESTER CREDIT HOURS
Choose three of the following courses:		9
NASL-275	Structure of American Sign Language	
NHSS-159	Deaf Community in the Modern World	
NHSS-251	Deaf Culture and Contemporary Civilization	
NHSS-260	Deaf People and Civil Rights	
NHSS-270	Multiculturalism in the Deaf Community	
NHSS-275	Visual Expressions of Deaf Culture	
NHSS-279	Seminar in Deaf Cultural Studies	
Total Semester Credit Hours		**9**

Admission requirements

Applicants for the Deaf cultural studies-American Sign Language certificate must be students in good standing in an undergraduate program at RIT, or hold an undergraduate degree from RIT.

Candidates must complete or have already completed an undergraduate degree program from RIT to receive this certificate.

Design and Imaging Technology, AAS

www.rit.edu/study/design-and-imaging-technology-aas
Andrea Zuchegno, Associate Professor
ammnvs@rit.edu

Program overview

People who work in the design and imaging field are responsible for designing, organizing, and producing print and Web-based media for business, communication, publishing, manufacturing, entertainment, and advertising markets. This is a large, exciting field that requires a variety of computer-based and traditional visual skills. The design and imaging technology program provides opportunities for students to enter various careers ranging from creative to highly technical positions at various degree levels. This program is available for qualified deaf and hard of hearing students.

As a student in the associate in applied science (AAS) degree in design and imaging technology, offered by RIT's National Technical Institute for the Deaf, you may choose a concentration in digital media, graphic design, or graphic production.

You will gain work experience through a required cooperative education experience. Depending on your specific program concentration and elective course selection, you will use traditional and computer-based methods to produce drawings, layouts, illustrations and digital photographic images; prepare documents for print, Web and digital distribution; produce interactive digital media; perform digital retouching and restoration of photographic images; produce composite digital images; design and produce websites; produce computer animations; plan and produce short-edited videos; and operate electrophotographic digital printing and inkjet systems.

Education in STEM (science, technology, engineering, math) careers is a major emphasis for students, parents and counselors as they consider which college programs match the students interests and aptitudes. Funding for STEM career preparation is often a driving factor. The design and imaging technology program is considered a STEM-career program. Graphic design and production for print, Web and digital media cannot happen without the use and application of technology and computing skills.

Read about the Career Skills you can learn in the design and imaging technology program.

O*Net Online lists STEM career clusters and graphic design is listed as being part of the Computer Science STEM disciplines.

The associate in applied science (AAS) degree in design and imaging technology is a career-focused program, designed to prepare you for direct employment in well-paying careers, following graduation. As a graduate of the AAS degree program, you also may apply for admission to a bachelor of fine arts degree program or a bachelor of science degree program in RIT's College of Art and Design after completing the AAS degree course of study.

We prepare students for jobs in the large visual communications industry which includes graphic design, commercial digital printing, website design and development, videography, animation, packaging design, photography, and specialty graphics. Jobs have evolved from a skilled trade craft to a high-tech digital design and production workflow.

The visual communications industry changes rapidly with the advent of new technologies and software programs. The world depends on text, graphics, illustrations, video and photos for communication using printed materials, web sites, and electronic media. There will always be a demand for graduates with skills in the visual communications field.

Some industry job outlook projections include:

- Summary Report for Web Developers
- Summary Report for Graphic Designers
- Summary Report for Multimedia Artists and Animators

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Students in the design and imaging technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Design and Imaging Technology, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
NAIS-120	Principles of Design and Color ‡ /§§	
NGRP-120	Principles of Graphic Production§	
NAIS-130	Raster and Vector Graphics	3
NAIS-140	Graphic Design and Typography I	3
NAIS-150	Page Layout I	3
NAIS-160	Web Design I	3
NCAR-010	Freshman Seminar	0
Choose one of the following:		3
NGRD-111	Drawing I‡ / §§	
NGRP-110	Digital Photography I§ / §§	
	General Education – Scientific Principles Perspective††	3
	General Education – Elective**	3
	General Education – Elective†	3
	General Education – First-Year Writing (WI)	3
Second Year		
NAIS-201	Employment Seminar	3
NAIS-299	Co-op: Visual Communications Studies	0
Choose two of the following:		6
N3DG-220	Principles of 4D Design	
NGRD-221	History of Graphic Design‡	
NGRP-231	Image Preparation§	
NGRD-240	Graphic Design and Typography II‡	
NGRP-245	Color Theory and Management§	
Choose three of the following:		9
NAIS-292	Portfolio Workshop‡ / §§	
NGRD-255	Publication Design‡	
NGRD-256	Identity Design‡	
NGRD-257	Animation	
NGRP-220	Videography §§	
NGRP-250	Page Layout II§	
NGRP-252	PDF Production and Workflow§	
NGRP-270	Specialty Graphics Imaging	
	Concentration Elective	3
	General Education – Ethical Perspective†	3
	General Education – Artistic Perspective†	3
	General Education – Global Perspective†	3

COURSE		SEMESTER CREDIT HOURS
Third Year		
Choose one of the following:		3
NAIS-291	Production Workshop	
NGRD-230	Digital Illustration‡	
NGRP-261	Interactive Digital Media §§	
	Concentration Elective	6
	General Education – Social Perspective†	3
Total Semester Credit Hours		**72**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and a General Education – Perspective or General Education – Elective.
‡ NGRD courses/Graphic Design concentration
§ NGRP courses/Graphic Production concentration
§§ Digital Media Concentration
** Any mathematics course numbered NMTH-140 or higher.
†† Any science course numbered NSCI-153 or higher.

Electives

COURSE	
Graphic Design Concentration	
N3DG-110	Basic 3D Modeling
N3DG-115	Intermediate 3D Modeling and Techniques
N3DG-220	Principles of 4D Design
NAIS-199	Independent Study-Visual Communications Studies
NAIS-289	Special Topics-Visual Communications Studies
NGRD-115	Visual Idea Development
NGRD-211	Drawing II
NGRD-258	Cartooning
NGRP-110	Digital Photography I
NGRP-210	Digital Photography II
NGRP-220	Videography
NGRP-232	Image Manipulation
NGRP-251	Publication Production
NGRP-260	Web Design II
NGRP-275	Digital Printing Systems
Graphic Production Concentration	
N3DG-110	Basic 3D Modeling
N3DG-115	Intermediate 3D Modeling and Techniques
NAIS-199	Independent Study - Visual Communications Studies
NAIS-289	Special Topics - Visual Communications Studies
NGRD-115	Visual Idea Development
NGRP-210	Digital Photography II
NGRP-220	Videography
NGRP-232	Image Manipulation
NGRP-251	Publication Production
NGRP-275	Digital Printing Systems
Digital Media Concentration	
N3DG-110	Basic 3D Modeling
N3DG-115	Intermediate 3D Modeling and Techniques
NAIS-199	Independent Study- Visual Communications Studies
NAIS-289	Special Topics - Visual Communications Studies
NGRD-211	Drawing II
NGRD-258	Cartooning
NGRP-110	Digital Photography I
NGRP-210	Digital Photography II
NGRP-232	Image Manipulation
NGRP-260	Web Design II

Admission requirements

For the career-focused AAS Degree

- 2 years of high school math preferred
- 1 year of high school science preferred
- English language skills as evidenced by application materials determine acceptance into the AAS or the AOS program.

Specific English, Mathematics, and Science Requirements and other Recommendations

Successful completion of the Summer Vestibule Program is required.

- English: Placement into the Critical Reading and Writing (UWRT-100) course.
- Mathematics: Placement into the Mathematics in Society (NMTH-140) course. Typically, students entering this major will have completed at least two years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Design and Imaging Technology, AOS

www.rit.edu/study/design-and-imaging-technology-aos

Andrea Zuchegno, Associate Professor
ammnvs@rit.edu

Program overview

People who work in the design and imaging field are responsible for designing, organizing, and producing print and Web-based media for business, communication, publishing, manufacturing, entertainment, and advertising markets. This is a large, exciting field that requires a variety of computer-based and traditional visual skills. The design and imaging technology program provides opportunities for students to enter various careers ranging from creative to highly technical positions at various degree levels. This program is available for qualified deaf and hard of hearing students.

As a student in the associate in occupational studies (AOS) degree in design and imaging technology, offered by RIT's National Technical Institute for the Deaf, you may choose a concentration in digital media, graphic design, or graphic production.

You will gain work experience through a required cooperative education experience. Depending on your specific program concentration and elective course selection, you will use traditional and computer-based methods to produce drawings, layouts, illustrations and digital photographic images; prepare documents for print, Web and digital distribution; produce interactive digital media; perform digital retouching and restoration of photographic images; produce composite digital images; design and produce websites; produce computer animations; plan and produce short-edited videos; and operate electrophotographic digital printing and inkjet systems.

Education in STEM (Science, Technology, Engineering, Math) careers is a major emphasis for students, parents and counselors as they consider which college programs match the students interests and aptitudes. Funding for STEM career preparation is often a driving factor. The design and imaging technology program is considered a STEM-career program. Graphic design and production for print, Web and digital media cannot happen without the use and application of technology and computing skills.

Read about the Career Skills you can learn in the design and imaging technology program.

O*Net Online lists STEM career clusters and graphic design is listed as being part of the Computer Science STEM disciplines.

The associate in occupational studies (AOS) degree in design and imaging technology program is a career-focused program, designed to prepare you for direct employment in well-paying careers, following graduation.

We prepare students for jobs in the large visual communications industry which includes graphic design, commercial digital printing, website design and development, videography, animation, packaging design, photography, and specialty graphics. Jobs have evolved from a skilled trade craft to a high-tech digital design and production workflow.

The visual communications industry changes rapidly with the advent of new technologies and software programs. The world depends on text, graphics, illustrations, video and photos for communication using printed materials, web sites, and electronic media. There will always be a demand for graduates with skills in the visual communications field.

Some industry job outlook projections include:

- Summary Report for Web Developers
- Summary Report for Graphic Designers
- Summary Report for Multimedia Artists and Animators

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Students in the design and imaging technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Design and Imaging Technology, AOS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		3
NAIS-120	Principles of Design and Color‡ / §§	
NGRP-120	Principles of Graphic Production§	
NAIS-130	Raster and Vector Graphics	3
NAIS-140	Graphic Design and Typography I	3
NAIS-150	Page Layout I	3
NAIS-160	Web Design I	3
NCAR-010	Freshman Seminar	0
NENG-212	NTID General Education Foundation – Career English: Career English I	3
NENG-213	NTID General Education Foundation – Career English: Career English II	3
Choose one of the following:		3
NGRD-111	Drawing I‡ / §§	
NGRP-110	Digital Photography I§ / §§	
	NTID General Education Foundation – Mathematics†	3
Second Year		
NAIS-201	Employment Seminar	3
NAIS-299	Co-op Visual Communications Studies	0
Choose two of the following:		6
NGRD-240	Graphic Design and Typography II‡	
NGRD-221	History of Graphic Design‡	
N3DG-220	Principles of 4D Design §§	
NGRP-231	Image Preparation§	
NGRP-245	Color Theory and Management§	
Choose three of the following:		9
NAIS-292	Portfolio Workshop ‡ / §§	
NGRD-255	Publication Design‡	
NGRD-256	Identity Design‡	
NGRD-257	Animation §§	
NGRP-220	Videography §§	
NGRP-252	PDF Production and Workflow§	
NGRP-250	Page Layout II§	
NGRP-270	Specialty Graphics Imaging§	
	Concentration Elective	3
	NTID General Education – Perspective**	3

COURSE		SEMESTER CREDIT HOURS
Third Year		
Choose one of the following:		3
NGRD-230	Digital Illustration‡	
NAIS-291	Production Workshop§	
NGRP-261	Interactive Digital Media§§	
	Concentration Elective	6
	NTID General Education – Perspective**	3
Total Semester Credit Hours		**63**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
‡ NGRD courses/Graphic Design concentration
§ NGRP courses/Graphic Production concentration
§§ N3DG courses/Digital Media Concentration
† Any mathematics course numbered NMTH-120 or higher; students who place above NMTH-140 can take math or a 3-credit course from any of the four NTID LAS Perspective categories: ASL-Deaf Cultural Studies; Communication, Social & Global Awareness; Creative and Innovative Exploration; and Scientific Processes.
** NTID General Education Perspective courses may be from any of these three Perspective categories: ASL-Deaf Cultural Studies; Communication, Social & Global Awareness; and Creative and Innovative Exploration.

Electives

COURSE	
Graphic Design Concentration	
N3DG-110	Basic 3D Modeling
N3DG-115	Intermediate 3D Modeling and Techniques
N3DG-220	Principles of 4D Design
NAIS-199	Independent Study-Visual Communications Studies
NAIS-289	Special Topics-Visual Communications Studies
NGRD-115	Visual Idea Development
NGRD-211	Drawing II
NGRD-258	Cartooning
NGRP-110	Digital Photography I
NGRP-210	Digital Photography II
NGRP-220	Videography
NGRP-232	Image Manipulation
NGRP-251	Publication Production
NGRP-260	Web Design II
NGRP-275	Digital Printing Systems
Graphic Production Concentration	
N3DG-110	Basic 3D Modeling
N3DG-115	Intermediate 3D Modeling and Techniques
NAIS-199	Independent Study - Visual Communications Studies
NAIS-289	Special Topics - Visual Communications Studies
NGRD-115	Visual Idea Development
NGRP-210	Digital Photography II
NGRP-220	Videography
NGRP-232	Image Manipulation
NGRP-251	Publication Production
NGRP-275	Digital Printing Systems
Digital Media Concentration	
N3DG-110	Basic 3D Modeling
N3DG-115	Intermediate 3D Modeling and Techniques
NAIS-199	Independent Study- Visual Communications Studies
NAIS-289	Special Topics - Visual Communications Studies
NGRD-211	Drawing II
NGRD-258	Cartooning
NGRP-110	Digital Photography I
NGRP-210	Digital Photography II
NGRP-232	Image Manipulation
NGRP-260	Web Design II

Admission requirements

For the career-focused AOS Degree

- 2 years of high school math preferred
- 1 year of high school science preferred
- English language skills as evidenced by application materials determine acceptance into the AAS or the AOS program.

Specific English, Mathematics and Science Requirements and other Recommendations

Successful completion of the Summer Vestibule Program is required.

- English: Placement into Career English I (NENG-212) or above. Students successfully completing AOS degrees typically enter with reading scores of 79 or higher on the NTID Reading Test and writing scores of 39 or higher on the NTID Writing Test.
- Mathematics: Placement into the Mathematics in Society (NMTH-140) course. Typically, students entering this major will have completed at least two years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

General Science, AS

www.rit.edu/study/general-science-as

Austin Gehret, Associate Professor
585-475-3971, augnts@rit.edu

Program overview

The associate in science (AS) degree in general science is designed to prepare deaf and hard-of-hearing students who are close to, but not fully ready for, direct entry into a bachelor's-level program in the sciences. The degree is a pathway for completing the course work taken during the first two years of a BS degree program in RIT's College of Science or RIT's College of Health Sciences and Technology. This program is available for qualified deaf and hard of hearing students.

This AS degree, offered by RIT's National Technical Institute for the Deaf, serves as a bridge program for qualified students based on academic transcripts, admission test scores, and other evidence that support a reasonable expectation of success in the baccalaureate program. By combining preparatory studies in math and English with bachelor's-level science, math, and liberal arts courses, students can qualify to transfer as juniors into a BS program depending on the course work taken for the AS degree. Students acquire the foundational skills necessary for success in the scientific field of their choice as they also develop skills and knowledge in communication, critical thinking, problem-solving, and mathematics.

You'll start with an AS in general science, which provides you with the courses and credits you need to enroll in and successfully complete a bachelor's degree program. Qualified students who complete the AS in general science degree will be admitted to a bachelor's degree as juniors.

Upon successful completion of your AS program in general science, you will have several options from which to choose. You can enroll in RIT's College of Science, where you can pursue a bachelor's degree in biochemistry, biology, biotechnology and molecular bioscience, chemistry, or environmental science Or you can enroll in RIT's College of Health Sciences and Technology, where you can work towards a bachelor's degree in biomedical sciences.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Qualified students also may go on to enroll in graduate or professional school upon completion of the bachelor's degree.

Curriculum

General Science, AS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
NMTH-275	Advanced Mathematics (General Education)	3
UWRT-150	FYW: Writing Seminar (WI) (General Education – First-Year Writing)	3
Choose one of the following course sequences:		8
CHMG-141	General & Analytical Chemistry I (General Education – Scientific Principles Perspective)	
CHMG-142	General & Analytical Chemistry II	
CHMG-145	General & Analytical Chemistry I Lab	
CHMG-146	General & Analytical Chemistry II Lab	
or		
BIOL-101	General Biology I (General Education – Scientific Principles Perspective)	
BIOL-102	General Biology II	
BIOL-103	General Biology I Lab	
BIOL-104	General Biology II Lab	
Choose one of the following:		3
NMTH-220	Trigonometry	
NMTH-250	Elementary Statistics	
	General Education – Electives	6
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
Second Year		
	Professional Elective Labs‡	4
	Professional Electives‡	15
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Electives	3
	General Education – Electives†	3
Total Semester Credit Hours		**60**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate's degrees are required to complete one Wellness course.
† Students take Calculus A (MATH-171) or Introduction to Statistics I (STAT-145) depending on their focus area. Students may need to take additional math coursework upon entry to the BS program as required by the specified major.
‡ These electives fulfill course work that aligns with the desired College of Science or College of Health Sciences and Technology BS degree program chosen by the student.

Admission requirements

For the AS Degree Leading to Bachelor's Degree (Associate+Bachelor's Program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills as evidenced by application materials determine associate degree options.

Specific English, Mathematics and Science Requirements and other Recommendations

The proposed admission requirements are the same as those already established for admitting students into the NTID science pre-baccalaureate program.

- English: Placement into Critical Reading and Writing (UWRT-100) or a First Year Writing course, such as FYW: Writing Seminar (UWRT-150);
- Mathematics: NTID Math Placement score greater than or equal to 40, which equates to placement into Advanced Mathematics (NMTH-275). Students will enroll in the mathematics courses required by the intended bachelor's program. Typically, students entering this program will have completed at least three years of high school mathematics. Once in the program, students will take math courses that are appropriate for their intended focus area.
- Science: Students will enroll in science courses that lead to their intended bachelor's program. Typically, students entering this program will have completed at least three years of high school science.
- ACT (optional): The ACT middle 50% composite score is 18-21 with no sub-scores less than 19.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Laboratory Science Technology, AAS

www.rit.edu/study/laboratory-science-technology-aas

Austin Gehret, Associate Professor
585-475-3971, augnts@rit.edu

Program overview

The laboratory science technology program, with its foundation of course sequences in chemistry, biology, and instrumental analysis, was developed primarily from an industry perspective to prepare students for employment as laboratory technicians. The program has several significant factors that set it apart, including the application of real-world analyses and a state-of-the-art instrumentation laboratory. Graduates are prepared to work in a broad range of fields, including chemical, biological, biotechnical, pharmaceutical, environmental, industrial, forensic, and food analysis. This program is available for qualified deaf and hard of hearing students.

If you're interested in doing scientific analysis and lab work in chemical, biological, biotechnical, pharmaceutical, environmental, forensic, food or industrial fields, then the laboratory science technology program is for you. You will study in laboratory settings with experienced faculty and learn to use state-of-the-art laboratory equipment for scientific analysis. Our advanced, high-tech analytical instrumentation is equivalent to that used by scientists on the job. You get hands-on experience using this instrumentation daily.

Laboratory science technology, offered by RIT's National Technical Institute for the Deaf, is available as an associate in applied science (AAS) degree or as an Associate+Bachelor's Degree Program.

The AAS degree in laboratory science technology is a career-focused degree program that leads to immediate entry into well-paying careers at the paraprofessional or technician level in municipal, public, private and industrial laboratories. Technicians are involved with the collection and preparation of samples and standards. They also perform instrumental, volumetric, gravimetric, and biological analyses. Additional job responsibilities may include the interpretation and reporting of experimental results and data.

The Associate+Bachelor's Degree Program in laboratory science technology prepares you to complete an RIT bachelor's degree. In this option, upon successful completion of the AAS in laboratory science technology, provided you maintain a 3.0 or higher grade point average, you will have several bachelor's degree options from which to choose. You can enroll in RIT's School of Individualized Study, where you can pursue a bachelor's degree in applied arts and science. Or you may enroll in RIT's College of Science, where you can work towards a bachelor's degree in biochemistry, biology, biotechnology and molecular bioscience, chemistry, or environmental science. Qualified laboratory science technology students also have continued their education in other majors in RIT's College of Science and College of Health Sciences and Technology upon completion of the laboratory science technology program. The length of time required to obtain a bachelor's degree upon completion of the AAS program and the number of credits transferred from the laboratory science technology curriculum vary by program.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the laboratory science technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Laboratory Science Technology, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
NLST-120	Laboratory Tools	3
NLST-171	Fundamentals of Chemistry I	3
NLST-172	Fundamentals of Chemistry II	3
NLST-220	Analytical Chemistry	4
NMTH-212	General Education – Elective: Integrated Algebra‡	3
NSCI-161	Fundamentals of Biology I (General Education – Scientific Principles Perspective)	3
NSCI-162	Fundamentals of Biology II	3
	General Education – First Year Writing (WI)	3
	General Education – Elective†	3
	General Education – Ethical Perspective†	3
Second Year		
NLST-225	Laboratory Applications	3
NLST-230	Principles of Organic Chemistry	4
NLST-232	Laboratory Mathematics	3
NLST-235	Principles of Biochemistry	3
NLST-240	Biotechnology I	3
NLST-245	Biotechnology II	3
NLST-250	Quantitative Instrumental Analysis	4
NLST-255	Chemical Separations & Chromatography	4
NLST-260	Laboratory Methods	3
NLST-299	Co-op: Laboratory Science Technology	0
	General Education - Artistic Perspective	3
Third Year		
	Technical Electives§	6
	General Education – Global Perspective†	3
	General Education – Social Perspective†	3
Total Semester Credit Hours		**76**

See NTID General Education Curriculum (GE) requirements for more information.
See Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and a General Education - Perspective or General Education - Elective.
‡ Students placing above NMTH-212 must take a higher-level NMTH or MATH (College of Science) course as appropriate.
§ Please see list of professional /technical electives below.

Professional/Technical electives*

BIOL-101	General Biology I
BIOL-121	Introductory Biology I
CHEM-130	Chemical Connections
CHEM-151	General Chemistry
CHEM-155	Chemistry Workshop
CHMG-141	General & Analytical Chemistry I
MATH-161	Applied Calculus
MATH-171	Calculus A
MATH-181	Project-Based Calculus I
MEDG-101	Human Biology I
MEDS-201	Language of Medicine
MEDS-250	Human Anatomy and Physiology I
NLST-270	Chemical Technology
NLST-285	Undergraduate Research: Laboratory Science Technology
STAT-145	Introduction to Statistics I
	NMTH-220 or above
	NSCI-120 or above

* Some of these courses may require department approval. Additional courses may be used as electives, with department approval.

Admission requirements

For the career-focused AAS Degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

For the AAS Degree Leading to Bachelor's Degree (Associate+Bachelor's Program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills as evidenced by application materials determine associate degree options.

Specific English, Mathematics, and Science Requirements and other Recommendations

- English: Placement in a First Year Writing course, such as FYW: Writing Seminar (UWRT-150). Students typically enter First-Year Writing with reading scores equivalent to 130 or higher on the NTID Reading Test and writing scores of 67 or higher on the NTID Writing Test. However, students who complete AAS degrees typically enter NTID with reading scores above 98 on the NTID Reading Test and writing scores above 50 on the NTID Writing Test.
- Mathematics: Placement in Integrated Algebra (NMTH-212) or higher. Typically, students entering this major will have completed at least three years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science. Completion of high school chemistry is required.
- ACT (optional): The ACT middle 50% composite score is 18-21.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Laboratory Science Technology, AOS

www.rit.edu/study/laboratory-science-technology-aos

Austin Gehret, Associate Professor
585-475-3971, augnts@rit.edu

Program overview

The laboratory science technology program, with its foundation of course sequences in chemistry, biology, and instrumental analysis, was developed primarily from an industry perspective to prepare students for employment as laboratory technicians. The program has several significant factors that set it apart, including the application of real-world analyses and a state-of-the-art instrumentation laboratory. Graduates are prepared to work in a broad range of fields, including chemical, biological, biotechnical, pharmaceutical, environmental, industrial, forensic, and food analysis. This program is available for qualified deaf and hard of hearing students.

If you're interested in doing scientific analysis and lab work in chemical, biological, biotechnical, pharmaceutical, environmental, forensic, food or industrial fields, then the laboratory science technology program is for you. You will study in laboratory settings with experienced faculty and learn to use state-of-the-art laboratory equipment for scientific analysis. Our advanced, high-tech analytical instrumentation is equivalent to that used by scientists on the job. You get hands-on experience using this instrumentation daily.

The associate in occupational studies (AOS) degree in laboratory science technology, offered by RIT's National Technical Institute for the Deaf, is a career-focused degree program that leads to immediate entry into well-paying careers at the paraprofessional or technician level in municipal, public, private and industrial laboratories. Technicians are involved with the collection and preparation of samples and standards. They also perform instrumental, volumetric, gravimetric, and biological analyses. Additional job responsibilities may include the interpretation and reporting of experimental results and data.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the laboratory science technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Laboratory Science Technology, AOS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
NENG-212	NTID General Education Foundation – Career English: Career English I	3
NENG-213	NTID General Education Foundation – Career English: Career English II	3
NLST-120	Laboratory Tools	3
NLST-171	Fundamentals of Chemistry I	3
NLST-172	Fundamentals of Chemistry II	3
NLST-220	Analytical Chemistry	4
NMTH-212	NTID General Education Foundation – Mathematics: Integrated Algebra†	3
NSCI-161	NTID General Education – Scientific Processes Perspective: Fundamentals of Biology I	3
NSCI-162	Fundamentals of Biology II	3
Second Year		
NLST-225	Laboratory Applications	3
NLST-230	Principles of Organic Chemistry	4
NLST-235	Principles of Biochemistry	3
NLST-240	Biotechnology I	3
NLST-245	Biotechnology II	3
NLST-250	Quantitative Instrumental Analysis	4
NLST-255	Chemical Separations & Chromatography	4
NLST-260	Laboratory Methods	3
NLST-299	Co-op: Laboratory Science Technology	0
Third Year		
NLST-232	Laboratory Mathematics	3
	Technical Electives‡	6
	NTID General Education – Perspective§	3
Total Semester Credit Hours		**67**

See NTID General Education Curriculum (GE) requirements for more information.
See Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† Students placing above NMTH-212 can take a higher-level NMTH course or any course from a non-science GE Perspective area.
‡ Courses that may be used as a technical elective include: Chemical Technology (NLST-270), Undergraduate Research: Laboratory Science Technology (NLST-285, with department approval), NSCI-120 or above with department approval, or NMTH-220 or above with department approval.
§ This GE Perspective course may be from any of the following three Perspective categories: ASL-Deaf Cultural Studies; Communication, Social & Global Awareness; or Creative and Innovative Exploration.

Admission requirements

For the career-focused AOS Degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

Specific English, Mathematics, and Science Requirements and other Recommendations

- English: Placement into Career English I (NENG-212) or above. Students successfully completing AOS degrees typically enter with reading scores of 79 or higher on the NTID Reading Test and writing scores of 39 or higher on the NTID Writing Test.
- Mathematics: Placement into Integrated Algebra (NMTH-212) or above. Typically, students entering this major will have completed at least three years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science. Completion of high school chemistry is required.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Mobile Application Development, AAS

www.rit.edu/study/mobile-application-development-aas

Brian Trager, Associate Professor
585-286-5318, Brian.Trager@rit.edu

Program overview

The associate in applied science (AAS) degree in mobile application development prepares you for work in the software development industry with a focus on application design and development for mobile platforms. Mobile app development is a field that brings concepts in programming, web development, and interface design together. Using current and emerging technologies, you develop skills in app design, learn relevant programming languages for application development on a variety of smart-devices, and learn the policies and procedures for submitting apps for distribution. This program is available for qualified deaf and hard of hearing students.

Courses you will take cover multiple aspects of internet, mobile-related technologies, including programming languages and web markup, server side technologies and tools, mobile web development, responsive design, and application optimization for mobile devices.

Graduates of this program may work independently or with a team of programmers writing and developing software programs for mobile applications for contemporary devices. This requires skills in information gathering, user-centered design, effective deployment practices on a range of devices, and strong communication skills.

Mobile application development is available as AAS or as an Associate+Bachelor's Degree Program.

The AAS degree in mobile application development, offered by RIT's National Technical Institute for the Deaf, is a career-focused degree program that leads to immediate entry into the workforce.

The Associate+Bachelor's Degree Program in mobile application development prepares you to complete an RIT bachelor's degree. You start with an AAS in mobile application development, which provides you with the foundational courses and credits you need to enroll in and successfully complete a bachelor's degree program in RIT's Golisano College of Computing and Information Sciences. Upon completion of your AAS program, you will enroll in the Golisano College where you will complete a bachelor's degree in web and mobile computing.

Learn more about the benefits of pursuing an Associate+Bachelor's Degree Program.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the mobile application development program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Mobile Application Development, AAS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NACA-172	Website Development‡	3
NCAR-010	Freshman Seminar	0
NMAD-155	Survey of Emerging Visual Design	3
NMAD-180	Programming Fundamentals I: Mobile Domain	4
NMAD-181	Programming Fundamentals II: Mobile Domain	4
NMAD-182	Software Analysis and Design	3
NMAD-250	Mobile User Experience	3
NMTH-275	Advanced Mathematics (General Education)	3
UWRT-150	FYW: Writing Seminar (WI) (General Education – First-Year Writing)	3
	General Education – Elective*	3
Second Year		
ISTE-230	Introduction to Database and Data Modeling	3
ISTE-240	Web & Mobile II	3
NACT-240	The World of Work	3
NMAD-252	Mobile User Interfaces	3
NMAD-260	Mobile App Development I	4
NMAD-261	Mobile App Development II	4
NMAD-262	Web Services and Data Storage Technologies	3
NMAD-299	Mobile Application Development Co-op	0
	General Education – Ethical Perspective*	3
	General Education – Social Perspective*	3
	General Education – Scientific Principles Perspective	3
Third Year		
NBUS-225	Introduction to Entrepreneurship	3
NMAD-290	Mobile Applications Development Capstone Projects	3
	Open Elective*	3
	General Education – Artistic Perspective*	3
	General Education – Global Perspective*	3
Total Semester Credit Hours		**76**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
* An ASL-Deaf Cultural Studies (AASASLDCS) course is required for graduation. It can be taken in any semester and can be taken at NTID or another college of RIT. In order to fulfill this requirement as part of the credit hours in the program, it can be a course approved for both AASASLDCS and a General Education – Perspective or General Education – Elective.
‡ NACA-172 and ISTE-140 are equivalents.

Admission requirements

For the career-focused AAS Degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

For the AAS Degree Leading to Bachelor's Degree (Associate+Bachelor's Program)

- 2 years of math required; students interested in engineering, math and science transfer programs should have three or more years of math.
- 1 year of science required; students interested in engineering, math and science transfer programs should have two or more years of science.
- Physics is recommended for students interested in engineering.
- English language skills, as evidenced by application materials, determine associate degree options.

Specific English, Mathematics and Science Requirements and other Recommendations

- English: Placement in a First Year Writing course such as FYW: Writing Seminar (UWRT-150). Students that place into Critical Reading and Writing (UWRT-100) would also be considered.

- Mathematics: Placement into NTID Introduction to Discrete Mathematics (NMTH-255) or higher. Typically, students entering this major will have completed at least three years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 18-21 with minimum scores of 18 in Mathematics, 16 in English, and 19 in Reading.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Performing Arts, Certificate

www.rit.edu/study/performing-arts-certificate
Erin Auble, Principal Lecturer
emtnpa@rit.edu

Program overview

The performing arts certificate program offers deaf and hard-of-hearing students the opportunity to develop knowledge of standard theatrical operating procedures as well as principles and practices of theater accessibility for deaf people. Students completing this certificate often go on to work in professional and community theater. The certificate also provides a solid foundation for those who wish to pursue further education in the performing arts. The certificate is offered to students enrolled in AOS and AAS degree programs at NTID. It is not a stand-alone certificate. Students must take three 3-credit courses from the NTID Department of Performing Arts and at least one credit of Theatre Practicum (PRFN 218) to meet the certificate requirements.

Curriculum

Performing Arts, certificate, typical course sequence

COURSE		SEMESTER CREDIT HOURS
PRFN-218	Theatre Practicum	1
Choose three of the following:		9
PRFN-100	Introduction to Performing Arts	
PRFN-102	Introduction to Stagecraft	
PRFN-111	Sign Mime, Creative Movement, and Visual Theatre	
PRFN-199	Independent Study: Performing Arts	
PRFN-200	Appreciation of Theatrical Design	
PRFN-201	Appreciation of Media in Performance	
PRFN-204	Scenic Painting and Props	
PRFN-206	Stage Makeup	
PRFN-207	Appreciation of Theatrical Costumes	
PRFN-208	Appreciation of Theatrical Scenery	
PRFN-209	Appreciation of Theatrical Lighting	
PRFN-211	Acting with Physical Expression	
PRFN-219	Seminar in Performing Arts	
PRFN-240	Dance History	
PRFN-243	Dance: Jazz	
PRFN-244	Dance: Hip Hop	
PRFN-246	Dance: Modern	
PRFN-247	Dance: Ballet	
PRFN-250	Choreography: Designing Movement	
PRFN-289	Special Topics: Performing Arts	
Total Semester Credit Hours		**10**

Admission requirements

Applicants for the performing arts certificate must be students in good standing in an undergraduate program at RIT, or hold an undergraduate degree from RIT.

Candidates must complete or have already completed an undergraduate degree program from RIT to receive this certificate.

Pre-Baccalaureate Studies in Engineering

www.rit.edu/study/pre-baccalaureate-studies-engineering

Karen Beiter, Associate Professor
585-286-4546, kjbndp@rit.edu

Program overview

The pre-baccalaureate studies program is available to students who are accepted by RIT's National Technical Institute for the Deaf (NTID) and are close to, but not fully ready for, direct entry into a baccalaureate-level program through one of the other colleges of RIT. It is a bridge program for qualified students, based on academic transcripts, scores on admissions tests, and other evidence that supports a reasonable expectation of success in baccalaureate course work. Qualified students who are undecided as to a program of study may choose the career exploration studies program.

Enrollment in the pre-baccalaureate studies program is appropriate for students who need to further develop mathematics, English, or discipline-related skills. The academic program is flexible and individualized and allows students to focus on needed skills while concurrently progressing toward their chosen field of study. Students may take courses taught by NTID faculty, as well as entry-level courses taught in other RIT colleges. While in the program, students receive academic advising as well as career counseling.

Students cannot receive a degree in pre-baccalaureate studies. Rather, they will apply for admission into a baccalaureate program as soon as they are academically ready and the college offering their chosen baccalaureate program reviews their application for admission. After completing an entire academic year in the program, a student must transfer to a degree-granting program in NTID or one of the other colleges of RIT.

Curriculum

Pre-baccalaureate Studies, Engineering Option, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
PHYS-211	University Physics I	4
PHYS-212	University Physics II	4
MATH-181	Calculus I‡	4
MATH-182	Calculus II‡	4
	General Education Courses	6
	Pre-baccalaureate Courses†	0-3
	Major Courses	6
	General Education – Elective	3
Total Semester Credit Hours		**31-34**

Please see the General Education Curriculum (GE) in the Graduation Requirements section of this bulletin for more information.

† Pre-baccalaureate courses strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.

‡ Alternative mathematics courses may be required as prerequisites, depending on placement. If pursuing the physics option, students must choose the physics sequence.

Pre-baccalaureate Studies, Engineering Technology Option, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
PHYS-111	College Physics I	4
MATH-111	Precalculus	3
MATH-171	Calculus A‡	3
MATH-172	Calculus B‡	3
	General Education - Elective	3
	Pre-baccalaureate Courses†	0-3
	Undeclared Engineering Technology Seminar	1
	Major Courses	6
	General Education Courses	6
Total Semester Credit Hours		**29-32**

Please see the General Education Curriculum (GE) in the Graduation Requirements section of this bulletin for more information.

† Pre-baccalaureate courses strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.

‡ Alternative mathematics courses may be required as prerequisites, depending on placement. If pursuing the physics option, students must choose the physics sequence.

Admission requirements

Specific English, Mathematics and Science Requirements and other Recommendations

Students entering pre-baccalaureate studies in engineering will typically be required to have:

- English: Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150), or Critical Reading and Writing (UWRT-100).
- Mathematics: Placement into NTID's Advanced Math (NMTH-275) course or higher, such as Pre-calculus (MATH-111).
- Science: Readiness after a single NTID science course, Concepts of College Physics (NSCI-270), for entry into RIT's College of Science Physics I (PHYS-111) course.
- ACT (optional): The ACT middle 50% composite score is 18-21 (20 Math, 18 Reading).

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Pre-Baccalaureate Studies in Liberal Arts

www.rit.edu/study/pre-baccalaureate-studies-liberal-studies
Kathryn Schmitz, Associate Professor
5854756813, kls4344@ntid.rit.edu

Program overview

The pre-baccalaureate studies program is available to students who are accepted by NTID and are close to direct entry into a baccalaureate-level program through one of the other colleges of RIT. It is a bridge program for qualified students, based on academic transcripts, scores on admissions tests, and other evidence that supports a reasonable expectation of success in baccalaureate course work. Qualified students who are undecided as to a program of study may choose the career exploration studies program.

Enrollment in the pre-baccalaureate studies program is appropriate for students who need to further develop mathematics, English, or discipline-related skills. The academic program is flexible and individualized and allows students to focus on needed skills while concurrently progressing toward their chosen field of study. Students may take courses taught by NTID faculty, as well as entry-level courses taught in other RIT colleges. While in the program, students receive academic advising as well as career counseling.

Students cannot receive a degree in pre-baccalaureate studies. Rather, they will apply for admission into a baccalaureate program as soon as they are academically ready and the college offering their chosen baccalaureate program reviews their application for admission. After completing an entire academic year in the program, a student must transfer to a degree-granting program in NTID or one of the other colleges of RIT.

Curriculum

Pre-baccalaureate Studies, Liberal Arts, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
	First Year Major Courses	6
	General Education Courses*	6-9
	Mathematics or Science Course‡	3
	NTID Humanities or Social Science Courses§	3
	Pre-Baccalaureate Courses†	6-9
Total Semester Credit Hours		**24-30**

* Please see the NTID General Education Curriculum (GE) for more information. Depending on placement, the writing sequence may begin with Critical Reading and Writing (UWRT-100) or a First Year Writing course, such as FYW: Writing Seminar (UWRT-150). Students should also choose a course that satisfies one of the RIT General Education Perspectives: ethical, artistic, global, or social.

† Pre-baccalaureate courses strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.

‡ Students may choose one of the following: NMTH-210, NMTH-250, NMTH-260, or a science course numbered NSCI-250 or higher.

§ Students may choose one of the following: any communication studies course numbered NCOM-201 or higher, or any humanities and social sciences course numbered NHSS-260 or higher.

Admission requirements

Specific English, and Mathematics Requirements and other Recommendations

Students entering pre-baccalaureate studies in liberal studies will typically be required to have:

- English: Placement into Critical Reading and Writing (UWRT-100)
- Mathematics: Placement into the NTID Advanced Mathematics (NMTH-275) course or higher
- ACT (optional): The ACT middle 50% composite score is 18-21 with a reading score of 20 and all other skill area scores of 18 or higher.

Financial Aid and Scholarships

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RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Pre-Baccalaureate Studies in Science and Mathematics

www.rit.edu/study/pre-baccalaureate-studies-science-and-mathematics

Austin Gehret, Associate Professor
585-475-3971, augnts@rit.edu

Program overview

The pre-baccalaureate studies program is available to students who are accepted by NTID and are close to, but not fully ready for, direct entry into a baccalaureate-level program through one of the other colleges of RIT. It is a bridge program for qualified students, based on academic transcripts, scores on admissions tests, and other evidence that supports a reasonable expectation of success in baccalaureate course work. Qualified students who are undecided as to a program of study may choose the career exploration studies program.

Enrollment in the pre-baccalaureate studies program is appropriate for students who need to further develop mathematics, English, or discipline-related skills. The academic program is flexible and individualized and allows students to focus on needed skills while concurrently progressing toward their chosen field of study. Students may take courses taught by NTID faculty, as well as entry-level courses taught in other RIT colleges. While in the program, students receive academic advising as well as career counseling.

Students cannot receive a degree in pre-baccalaureate studies. Rather, they will apply for admission into a baccalaureate program as soon as they are academically ready and the college offering their chosen baccalaureate program reviews their application for admission. After completing an entire academic year in the program, a student must transfer to a degree-granting program in NTID or one of the other colleges of RIT.

Curriculum

Pre-Baccalaureate Studies (Biology, Biotechnology, Environmental Science, Environmental Management or Medical Sciences), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-101	General Biology I	3
BIOL-102	General Biology II	3
BIOL-103	General Biology I Lab	1
BIOL-104	General Biology II Lab	1
MATH-101	College Algebra	3
MATH-161	Applied Calculus‡	4
NCAR-010	Freshman Seminar	0
	Pre-baccalaureate courses*	3-6
	General Education Courses†	9
Total Semester Credit Hours		**27-30**

* Pre-baccalaureate courses are an available option to strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.
† Please see General Education Requirements for more information. Depending on placement, the writing sequence may begin with Critical Reading and Writing (UWRT-100) or FYW: Writing Seminar (UWRT-150).
‡ Alternative mathematics courses may be required as prerequisites, depending on placement.

Pre-Baccalaureate Studies in Science (Chemistry Option), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHMG-141	General & Analytical Chemistry I	3
CHMG-142	General & Analytical Chemistry II	3
CHMG-145	General & Analytical Chemistry I Lab	1
CHMG-146	General & Analytical Chemistry II Lab	1
MATH-181	Calculus I	4
MATH-182	Calculus II	4
NCAR-010	Freshman Seminar	0
	General Education Courses*	9
	Pre-baccalaureate courses†	3-6
Total Semester Credit Hours		**28-31**

* Please see General Education Requirements for more information. Depending on placement, the writing sequence may begin with Critical Reading and Writing (UWRT-100) or FYW: Writing Seminar (UWRT-150).
† Pre-baccalaureate courses are available to strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.

Pre-Baccalaureate Studies in Science (Math or Physics Option), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
Choose one of the following course sequences:§		8
CHMG-141	General & Analytical Chemistry I	
CHMG-142	General & Analytical Chemistry II	
CHMG-145	General & Analytical Chemistry I Lab	
CHMG-146	General & Analytical Chemistry I Lab	
or		
PHYS-211	University Physics I	
PHYS-212	University Physics II	
Choose one of the following course sequences:‡		6-8
MATH-171	Calculus A	
MATH-172	Calculus B	
or		
MATH-181	Calculus I	
MATH-182	Calculus II	
	General Education Courses*	9
	Pre-baccalaureate Courses†	3-6
Total Semester Credit Hours		**26-31**

* Please see General Education Requirements for more information. Depending on placement, the writing sequence may begin with Critical Reading and Writing (UWRT-100) or FYW: Writing Seminar (UWRT-150).
† Pre-baccalaureate courses are an option to strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.
‡ Alternate mathematics courses may be required as prerequisites, depending on placement.
§ If pursuing the physics option, students must choose the physics sequence.

Admission requirements

Specific English and Mathematics Requirements and other Recommendations

Students entering pre-baccalaureate studies in science or mathematics will typically be required to have:

- English: Placement into Critical Reading and Writing (UWRT-100)
- Mathematics: Placement in NTID Advanced Mathematics (NMTH-275) course or higher
- ACT (optional): The ACT middle 50% composite score is 18-21 with subscores of at least 19.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Pre-Baccalaureate Studies in Visual Communications

www.rit.edu/study/pre-baccalaureate-studies-visual-communications

Andrea Zuchegno, Associate Professor
ammnvs@rit.edu

Program overview

The pre-baccalaureate studies program is available to students who are accepted by NTID and are close to, but not fully ready for, direct entry into a baccalaureate-level program through one of the other colleges of RIT. It is a bridge program for qualified students, based on academic transcripts, scores on admissions tests, and other evidence that supports a reasonable expectation of success in baccalaureate course work. Qualified students who are undecided as to a program of study may choose the career exploration studies program.

Enrollment in the pre-baccalaureate studies program is appropriate for students who need to further develop mathematics, English, or discipline-related skills. The academic program is flexible and individualized and allows students to focus on needed skills while concurrently progressing toward their chosen field of study. Students may take courses taught by NTID faculty, as well as entry-level courses taught in other RIT colleges. While in the program, students receive academic advising as well as career counseling.

Students cannot receive a degree in pre-baccalaureate studies. Rather, they will apply for admission into a baccalaureate program as soon as they are academically ready and the college offering their chosen baccalaureate program reviews their application for admission. After completing an entire academic year in the program, a student must transfer to a degree-granting program in NTID or one of the other colleges of RIT.

Curriculum

Pre-Baccalaureate Studies, Visual Communications Studies (American Crafts, Art, and Design), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NAIS-120	Principles of Design and Color	3
NAIS-130	Raster and Vector Graphics	3
NAIS-140	Graphic Design and Typography I	3
NCAR-010	Freshman Seminar	0
NGRD-111	Drawing I	3
NGRD-115	Visual Idea Development	3
NGRD-211	Drawing II	3
	General Education Courses	12
	Elective	3
Total Semester Credit Hours		**33**

Please see the General Education Requirements for more information.
Note: Portfolio of original artwork is required to determine admission. See the College of Art and Design support coordinator for further information.

Pre-Baccalaureate Studies, Visual Communications Studies (Photographic Arts and Sciences, BFA degree), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NAIS-120	Principles of Design and Color	3
NAIS-130	Raster and Vector Graphics	3
NAIS-140	Graphic Design and Topography I	3
NCAR-010	Freshman Seminar	0
NGRD-111	Drawing I	3
NGRD-115	Visual Idea Development	3
NGRP-110	Digital Photography I	3
NGRP-210	Digital Photography II	3
	General Education Courses	12
Total Semester Credit Hours		**33**

Please see the General Education Requirements for more information.

Pre-Baccalaureate Studies, Visual Communications Studies (Photographic Arts and Sciences, BS degree), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NAIS-120	Principles of Design and Color	3
NAIS-130	Raster and Vector Graphics	3
NCAR-010	Freshman Seminar	0
NGRP-110	Digital Photography I	3
NGRP-231	Image Preparation	3
NGRP-232	Image Manipulation	3
	General Education Courses	12
	Math Course*	3
	Science Course†	3
Total Semester Credit Hours		**33**

Please see the General Education Requirements for more information.
* Students may choose any mathematics course numbered NMTH-120 or higher.
† Students may choose any science course numbered NSCI-120 or higher.

Pre-Baccalaureate Studies, Visual Communications Studies (Film and Animation Option), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
NGRP-220	Videography	3
SOFA-107	Principles of Animation	3
SOFA-103	Introduction to Imaging and Video Systems	3
	Theatre Electives/Performing Arts†	3-9
	General Education Courses	12
Total Semester Credit Hours		**24-30**

Please see the General Education Requirements for more information.
† Please see the College of Art and Design support coordinator for a list of current theatre electives.

Pre-Baccalaureate Studies, Visual Communications Studies (Graphic Media Science and Technology), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NAIS-130	Raster and Vector Graphics	3
NAIS-150	Page Layout I	3
NCAR-010	Freshman Seminar	0
NGRP-231	Image Preparation	3
NGRP-232	Image Manipulation	3
NGRP-245	Color Theory and Management	3
	Math Course†	3
	Science Course‡	3
	General Education Courses	12
Total Semester Credit Hours		**33**

Please see the General Education Requirements for more information.
† Students may choose any mathematics course numbered NMTH-120 or higher.
‡ Students may choose any science course numbered NSCI-120 or higher.

Admission requirements

Specific English, Mathematics, and Science Requirements and other Recommendations

Students entering pre-baccalaureate studies in visual communications will typically be required to have:

- English: Placement into a First Year Writing course, such as FYW: Writing Seminar (UWRT-150)
- Mathematics: Placement into mathematics course NMTH-120 or higher for BFA degrees or NMTH-250 or higher for BS degrees
- Science: Placement into science NSCI-120 or higher for BFA degrees or NSCI-250 or higher for BS degrees
- ACT (optional): The ACT middle 50% composite score is 18-21

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Precision Manufacturing Technology, AOS

www.rit.edu/study/precision-manufacturing-technology-aos
Karen Beiter, Chairperson
585-286-4546, kjbndp@ntid.rit.edu

Program overview

Students in the associate in occupational studies (AOS) degree in precision manufacturing technology are prepared for employment in precision machining and/or precision optics manufacturing occupations. These include tool and die making, mold making, instrument making, manufacturing of optical elements, and computer numerical control machining (CNC). Graduates are successfully employed in both large manufacturing corporations and small contract manufacturing shops. This program is available for qualified deaf and hard of hearing students.

The precision manufacturing technology program, offered by RIT's National Technical Institute for the Deaf, prepares you for immediate employment upon graduation. Some of the job responsibilities for graduates include: set up and operate lathes, milling machine tools, grinders, polishers, computer numerical controlled machine tools, and computer-aided manufacturing (i.e., 5-axis); shape material into precision parts by conventional and nonconventional processes; follow blueprints; and use advanced measuring techniques to inspect work.

Experiential Learning

Cooperative Education

Cooperative education, or co-op for short, is full-time, paid work experience in your field of study. And it sets RIT graduates apart from their competitors. It's exposure–early and often–to a variety of professional work environments, career paths, and industries. RIT co-op is designed for your success.

Students in the precision manufacturing technology program are required to complete a cooperative education work experience prior to graduation. You may schedule your co-op after completing your second-year academic requirements.

Curriculum

Precision Manufacturing Technology, AOS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
NCAR-010	Freshman Seminar	0
NPMT-101	Blueprint Reading I	3
NPMT-121	Precision Measurement I	3
NPMT-131	Precision Manufacturing Technology I	3
NPMT-132	Precision Manufacturing Technology II	3
NPMT-214	CAD Applications	3
NENG-212	NTID General Education Foundation – Career English: Career English I	3
NENG-213	NTID General Education Foundation – Career English: Career English II	3
NMTH-206	Trigonometry for Coordinate Analysis	3
	NTID General Education Foundation – Mathematics†	3

COURSE		SEMESTER CREDIT HOURS
Second Year		
NPMT-201	Job Search for PMT	2
NPMT-207	Industrial Materials	3
NPMT-233	Precision Manufacturing Technology III	3
NPMT-234	Precision Manufacturing Technology IV	3
NPMT-241	Precision Optics Manufacturing I	3
NPMT-251	Computer Numerical Control I	3
NPMT-252	Computer Numerical Control II	3
NPMT-254	Introduction to Computer Aided Manufacturing	3
NPMT-299	Co-op: Precision Manufacturing Technology	0
	NTID General Education – Scientific Processes Perspective§	3
	NPMT Program Technical Elective	3
Third Year		
NPMT-235	Precision Manufacturing Technology V	3
NPMT-236	Precision Manufacturing Technology V Lab	3
	NTID General Education – Perspective‡	3
	NPMT Program Technical Elective	3
Total Semester Credit Hours		**68**

Please see the NTID General Education Curriculum (GE) for more information.
Please see Wellness Education Requirement for more information. Students completing associate degrees are required to complete one Wellness course.
† Any mathematics course numbered NMTH-180 or higher
‡ NTID LAS Perspective course may be from any of these three Perspective categories: ASL-Deaf Cultural Studies; Communication, Social & Global Awareness; and Creative and Innovative Exploration
§ Any scientific processes course NSCI-120 or higher.

Electives

COURSE	
NPMT-102	Blueprint Reading II
NPMT-237	Precision Grinding
NPMT-242	Precision Optics Manufacturing II
NPMT-253	Advanced CNC Concepts

Admission requirements

For the career-focused AOS Degree

- 2 years of math required
- 1 year of science required
- English language skills as evidenced by application materials determine associate degree options.

Specific English, Mathematics and Science Requirements and other Recommendations

Successful completion of a sampling experience either through the Summer Vestibule Program or an equivalent career exploration course is a prerequisite, as are the following:

- English: Placement into Career English I (NENG-212) or above. Students successfully completing AOS degrees typically enter with reading scores of 79 or higher on the NTID Reading Test and writing scores of 39 or higher on the NTID Writing Test.
- Mathematics: Placement into Foundations of Algebra (NMTH-180) or a higher-level course. Typically, students entering this major will have completed at least three years of high school mathematics.
- Science: Typically, students entering this major will have completed at least two years of high school science.
- ACT (optional): The ACT middle 50% composite score is 14-17.

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Faculty

Gerard J. Buckley, BS, Rochester Institute of Technology; MSW, University of Missouri; Ed.D., University of Kansas—President, NTID and Vice President and Dean, RIT; Associate Professor

Academic Affairs

Gary W. Behm, AAS, BS, Rochester Institute of Technology; MS, Lehigh University—Associate Vice President for Academic Affairs; Associate Professor

Joseph H. Bochner, BA, City University of New York at Queens College; MA, Ph.D., University of Wisconsin—Researcher; Professor

Jessica A. Cuculick, BS, MS, Rochester Institute of Technology; MSW, East Carolina University; Ed.D., University of Rochester—Associate Dean for Academic Administration; Professor

Stacey M. Davis, BA, Colgate University; BS, MS, Rochester Institute of Technology—Director for Cross-Registered Academic Services; Principal Lecturer

Peter C. Hauser, BA, Central Connecticut State University; MA, Ph.D., Gallaudet University—Professor

Joseph Hill, BS, Miami University; MA, Ph.D., Gallaudet University—Assistant Dean of NTID Faculty Recruitment and Retention; Associate Professor

Matthew A. Lynn, BS, The Ohio State University; MS, Indiana University; Ph.D., University of Arizona—Associate Dean for Curricular Affairs; Professor

American Sign Language and Interpreting Education

Keith M. Cagle, BS, Rochester Institute of Technology; MA, California State University at Northridge; Ph.D., University of New Mexico at Albuquerque—Chairperson; Associate Professor

Leisa R. Boling, AAS, BFA, MS, Rochester Institute of Technology—ASL Program Director, American Sign Language and Interpreting Education; Assistant Professor

Sandra Bradley, BS, Gallaudet University; MS, Rochester Institute of Technology—Senior Lecturer

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U.S. Government Representatives

The Honorable Kirsten Gillibrand, Member, U.S. Senate, New York State

The Honorable Joseph Morelle, Member, U.S. House of Representatives, New York State

The Honorable Charles E. Schumer, Member, U.S. Senate, New York State

College of Science

André Hudson, Dean
rit.edu/science

Programs of Study

Accelerated dual degree available

Undergraduates in the College of Science receive a unique education, one that emphasizes the applications of science and mathematics in the professional world while providing a comprehensive liberal arts education in the humanities and social sciences. The College of Science curricula reflects current trends in the application of science and mathematics while preparing students for graduate study or for immediate employment in business, industry, government, and the medical science professions. All of the college's undergraduate programs serve as excellent preparation for graduate, medical, law, or business school.

Within an academic community committed to diversity and student centeredness, our emphasis is on the practical aspects of science and mathematics as found in science and computer laboratories. Students learn important skills in critical and analytical thinking, problem solving, and technical communication. While we are career-oriented, we recognize the value of the liberal arts for the intellectual enrichment of our students. In addition to technical competence, many of the skills acquired through the study of the liberal arts also are required by employers for promotion and career advancement.

Please visit the college's website–**rit.edu/science**–for in depth information on academics, faculty, facilities, research initiatives, advising services, and more.

Admission requirements

For more information on undergraduate admission, including freshman and transfer admission guidelines, please refer to individual program descriptions and the Undergraduate Admission section of this bulletin.

Financial aid and scholarships

Please refer to the Financial Aid and Scholarships section of this bulletin for information regarding financial aid, scholarships, loans, and grants.

Applied Mathematics, BS

www.rit.edu/study/applied-mathematics-bs
Joshua Faber, Professor
585-475-5115, jafsma@rit.edu

Program overview

Applied mathematicians develop models for perfecting global positioning systems, analyzing cost-effectiveness in manufacturing processes, or improving digital encryption software. The applied mathematics major focuses on the study and solution of problems that can be mathematically analyzed across industrial fields and research disciplines.

The applied mathematics major focuses on the study and solution of problems that can be mathematically analyzed. Industry, academia, and government all have a great need for individuals with this type of education. You will gain the knowledge and skills to collaborate on complex problems with scientists, engineers, computer specialists, or other analysts. Some application areas include applied statistics; biology; business; economics; chemistry; electrical, industrial, or mechanical engineering; operations research; and imaging science.

Graduates typically are employed in scientific, engineering, business, or government environments, applying their mathematics background to the analysis and solution of real-world problems.

Course of Study

You can choose courses from more than twenty application areas that provide them with the knowledge and skills to collaborate on complex problems with scientists, engineers, computer specialists, or other analysts. Some of those areas include applied statistics; biology; business; economics; chemistry; electrical, industrial, or mechanical engineering; operations research; or imaging science.

Real-World Experiences

You'll collaborate with a faculty researcher on a variety of projects in both applied and theoretical mathematics providing you with valuable exposure to real-world problems faced by America's top companies and research organizations. As a result, RIT undergraduates in mathematics are highly sought as co-op employees.

You'll also have the opportunity to work with researchers in the School of Mathematics and Statistics studying interesting problems in areas such as computational photonics, mathematical biology, microelectromechanical systems, and network analysis.

Nature of Work

Mathematicians use theory, computational techniques, algorithms, and the latest computer technology to solve economic, scientific, engineering, physics, and business problems. The work of mathematicians falls into two broad classes — theoretical (pure) mathematics and applied mathematics. These classes, however, often overlap. Applied mathematicians start with a practical problem, envision its separate elements, and then reduce the elements to mathematical variables. They often use computers to analyze relationships among the variables, and they solve complex problems by developing models with alternative solutions.

Training Qualifications

Industry, academia, and government all have a great need for individuals with this type of education. Typically, graduates are employed in scientific, engineering, business, or government environments, applying their mathematics background to the analysis and solution of real-world problems.

In the federal government, entry-level job candidates usually must have a four-year degree with a major in mathematics or a four-year degree with the equivalent of a mathematics major. Outside the federal government, a graduate-level education is usually a minimum requirement; many seek advanced degrees in mathematics or a related discipline. However, those with bachelor's degrees who meet state certification requirements may become primary or secondary school mathematics teachers.

The majority of those with a master's degree in mathematics who work in private industry do so not as mathematicians but in related fields. For jobs in applied mathematics, training in the field in which mathematics will be used is very important. Mathematics is used extensively in physics, actuarial science, statistics, engineering, and operations research. Computer science, business and industrial management, economics, finance, chemistry, geology, life sciences, and behavioral sciences are likewise dependent on applied mathematics. Mathematicians also should have substantial knowledge of computer programming, because most complex mathematical computations and much mathematical modeling are done on a computer.

Master's Degrees and Doctorates

Graduate programs offered by the School of Mathematics and Statistics introduce students to rigorous advanced applied mathematical and statistical methodology. Students realize the potential for that cutting-edge methodology as a general tool in the study of exciting problems in science, business, and industry. The school offers the following advanced degrees: an advanced certificate in applied statistics, master of science degrees in applied and computational mathematics and applied statistics, and a doctorate degree in mathematical modeling.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Applied Mathematics, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-101	Principles of Computing (General Education)	3
CSCI-141	Computer Science I (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective ‡	4
Second Year		
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-231	Differential Equations	3
MATH-399	Mathematical Sciences Job Search Seminar	0
MATH-251	Probability and Statistics I	3
STAT-257	Statistical Inference	3
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
Choose one of the following:		4
MATH-221	Multivariable and Vector Calculus (General Education)	
MATH-221H	Honors Multivariable and Vector Calculus (General Education)	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective‡	4
Third Year		
MATH-431	Real Variables I	3
	Program Electives	18
	General Education – Immersion 1, 2	6
	Open Elective	3
Fourth Year		
MATH-411	Numerical Analysis	3
MATH-421	Mathematical Modeling (WI-PR)	3
MATH-441	Abstract Algebra I	3
MATH-501	Experiential Learning Requirement in Mathematics	0
	General Education – Immersion 3	3
	General Education – Electives	6
	Program Elective	3
	Open Electives	9
Total Semester Credit Hours		**121**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Applied Mathematics, BS degree/Applied and Computational Mathematics (thesis option), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-101	Principles of Computing (General Education)	3
CSCI-141	Computer Science I (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective‡	4
Second Year		
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-231	Differential Equations	3
MATH-251	Probability and Statistics	3
MATH-399	Mathematical Sciences Job Search Seminar	0
STAT-257	Statistical Inference	3
Choose one of the following:		4
MATH-221	Multivariable and Vector Calculus	
MATH-221H	Honors Multivariable and Vector Calculus	
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective‡	4
Third Year		
MATH-431	Real Variables I	3
	Program Electives	15
	General Education – Immersion 1, 2	6
	Open Electives	6
	General Education – Elective	3
Fourth Year		
MATH-411	Numerical Analysis	3
MATH-421	Mathematical Modeling (WI-PR)	3
MATH-441	Abstract Algebra I	3
MATH-501	Experiential Learning Requirement in Mathematics	0
MATH-606	Graduate Seminar I	1
MATH-607	Graduate Seminar II	1
	Math Graduate Core Electives	9
	General Education – Immersion 3	3
	General Education – Elective	3
	Open Electives	6
Fifth Year		
MATH-790	Research and Thesis	7
	MATH Graduate Electives	12
Total Semester Credit Hours		**145**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).

Applied Mathematics, BS degree/Applied and Computational Mathematics (project option), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-101	Principles of Computing (General Education)	3
CSCI-141	Computer Science I (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry and Scientific Principles Perspective‡	4
Second Year		
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-231	Differential Equations	3
MATH-251	Probability and Statistics	3
MATH-399	Mathematical Sciences Job Search Seminar	0
STAT-257	Statistical Inference	
Choose one of the following:		4
MATH-221	Multivariable and Vector Calculus	
MATH-221H	Honors Multivariable and Vector Calculus	
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Natural Science Inquiry and Scientific Principles Perspective‡	4
Third Year		
MATH-431	Real Variables I	3
	Program Electives	15
	General Education – Immersion 1, 2	6
	Open Electives	6
	General Education – Elective	3
Fourth Year		
MATH-411	Numerical Analysis	3
MATH-421	Mathematical Modeling (WI-PR)	3
MATH-441	Abstract Algebra I	3
MATH-606	Graduate Seminar I	1
MATH-607	Graduate Seminar II	1
	Math Graduate Core Electives	9
	General Education – Immersion 3	3
	General Education – Elective	3
	Open Electives	6
Fifth Year		
MATH-790	Research and Thesis	4
	MATH Graduate Electives	15
Total Semester Credit Hours		**145**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are recommended.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, physics, math, and chemistry

Appropriate associate degree programs for transfer

AS degree in liberal arts with math/science option

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Applied Statistics and Data Analytics, BS

www.rit.edu/study/applied-statistics-and-data-analytics-bs
Joshua Faber, Professor
585-475-5115, jafsma@rit.edu

Program overview

The applied statistics and data analytics degree provides you with a strong foundation in statistical methodology, experience in its applications, a solid background in the use of statistical computing packages, and the skills to collaborate on projects that rely on statistical analysis. The degree gives you an advantage in the fields of business, government, and industry, and also prepares you for advanced study in graduate programs. Diverse application areas for graduates include product design, biostatistics, data analytics, quality control, and statistical forecasting.

Educational Approach

Early courses are designed to give you a foundation in calculus, statistics, algebra, and computer science. Application areas are very diverse and include product design, biostatistics, actuarial science, quality control, and statistical forecasting.

Real-World Experiences

Students collaborate with specialists in both scientific and non-technical areas to design and conduct experiments and interpret the results. Application areas are very diverse and include product design, biostatistics, actuarial science, quality control, and statistical forecasting.

Nature of Work

Statisticians contribute to scientific inquiry by applying their mathematical and statistical knowledge to the design of surveys and experiments; collection, processing, and analysis of data; and interpretation of the results. Statisticians may apply their knowledge of statistical methods to a variety of subject areas, such as biology, economics, engineering, medicine, public health, psychology, marketing, education, and sports. Many economic, social, political, and military decisions cannot be made without the use of statistical techniques, such as the design of experiments to gain federal approval of a newly manufactured drug. In industry, statisticians play an important role in quality control and product/process improvement based on data analysis.

Advanced Degrees

Graduate programs offered by the School of Mathematics and Statistics introduce students to rigorous advanced applied mathematical and statistical methodology. Students realize the potential for that cutting-edge methodology as a general tool in the study of exciting problems in science, business, and industry. The school offers the following advanced degrees: an advanced certificate in applied statistics, master of science degrees in applied and computational mathematics and applied statistics, and a doctorate degree in mathematical modeling.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Experiential learning opportunities in statistics include a range of hands-on experiences, from co-ops and internships to undergraduate research that enable you to apply your statistical knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Curriculum

Applied Statistics and Data Analytics, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ISCH-110	Principles of Computing (General Education)	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective†	4
Second Year		
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-251	Probability and Statistics	3
STAT-257	Statistical Inference	3
MATH-399	Mathematical Sciences Job Search Seminar	0
Choose one of the following:		4
MATH-221	Multivariable and Vector Calculus (General Education)	
MATH-221H	Honors Multivariable and Vector Calculus (General Education)	
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
	Open Elective	3
	General Education – Elective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Scientific Principles Perspective†	4
Third Year		
STAT-305	Regression Analysis	3
STAT-325	Design of Experiments (WI-PR)	3
	Program Electives‡	15
	General Education – Immersion 1, 2	6
	General Education – Elective	3
Fourth Year		
STAT-405	Mathematical Statistics I	3
STAT-406	Mathematical Statistics II	3
STAT-500	Senior Capstone in Statistics (WI-PR)	3
STAT-501	Experiential Learning Requirement in Statistics	0
	General Education – Immersion 3	3
	Program Electives‡	3
	Open Electives	9
	General Education – Electives	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).

‡ Three of the six program electives must be from the following list of courses: Actuarial Mathematics (MATH-255), Topics in Mathematics of Finance (MATH-261), Stochastic Processes (MATH-505), Introduction to Time Series (STAT-335), Nonparametric Statistics (STAT-345), Multivariate Analysis (STAT-425), Statistical Software - R (STAT-511), Statistical Quality Control (STAT-521), Data Mining (STAT-547), Survey Design and Analysis (STAT-572), Categorical Data Analysis (STAT-584). A program elective is any MATH or STAT course with a course number higher than 250.

Up to 2 program electives can be selected from the following list: Financial Accounting (ACCT-110), Data Literacy Analytics & Decision Making (BANA-255), Statistical Analysis for Bioinformatics (BIOL-470), Operations Management (DECS-310), Econometrics I (ECON-403), Financial Management (FINC-220), Financial Analytics (FINC-580), Lean Six Sigma Fundamentals ISEE-582), Marketing Analytics (MKTG-365)

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Applied Statistics and Data Analytics, BS degree/ Applied and Computational Mathematics (thesis option), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ISCH-110	Principles of Computing	3
MATH-181	General Education - Mathematical Perspective A: Project-Based Calculus I	4
MATH-182	General Education - Mathematical Perspective B: Project-Based Calculus II	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education - Elective	3
	General Education - First Year Writing (WI)	3
	General Education - Ethical Perspective	3
	General Education - Artistic Perspective	3
	General Education - Natural Science Inquiry Perspective†	4
	General Education - Scientific Principles Perspective†	4
Second Year		
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-231	Differential Equations	3
MATH-251	Probability and Statistics	3
MATH-399	Mathematical Science Job Search Seminar	0
Choose one of the following:		4
MATH-221	Multivariable and Vector Calculus	
MATH-221H	Honors Multivariable and Vector Calculus	
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
STAT-257	Statistical Inference	3
	General Education - Immersion 1, 2	6
	General Education - Global Perspective	3
	General Education - Social Perspective	3
Third Year		
STAT-305	Regression Analysis	3
STAT-325	Design of Experiments (WI-PR)	3
	Open Electives	9
	General Education - Immersion 3	3
	Program Electives‡	12
Fourth Year		
MATH-606	Graduate Seminar I	1
MATH-607	Graduate Seminar II	1
STAT-405	Mathematical Statistics I	3
STAT-406	Mathematical Statistics II	3
STAT-500	Senior Capstone in Statistics (WI-PR)	3
STAT-501	Experiential Learning Requirement in Statistics	0
	Math Graduate Core Courses	9
	General Education - Electives	9
	Open Elective	3
Fifth Year		
MATH-790	Research & Thesis	7
	Math Graduate Electives	12
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).
‡ The four program electives must be from the following list of courses: Actuarial Mathematics (MATH-255), Topics in Mathematics of Finance (MATH-261), Stochastic Processes (MATH-505), Introduction to Time Series (STAT-335), Nonparametric Statistics (STAT-345), Multivariate Analysis (STAT-425), Statistical Software - R (STAT-511), Statistical Quality Control (STAT-521), Data Mining (STAT-547), Survey Design and Analysis (STAT-572), Categorical Data Analysis (STAT-584). A program elective is any MATH or STAT course with a course number higher than 250.

Applied Statistics and Data Analytics, BS degree/ Applied and Computational Mathematics (project option), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ISCH-110	Principles of Computing	3
MATH-181	General Education - Mathematical Perspective A: Project-Based Calculus I	4
MATH-182	General Education - Mathematical Perspective B: Project-Based Calculus II	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education - Elective	3
	General Education - First Year Writing (WI)	3
	General Education - Artistic Perspective	3
	General Education - Ethical Perspective	3
	General Education - Natural Science Inquiry Perspective†	4
	General Education - Scientific Principles Perspective†	4
Second Year		
MATH-200	Discrete Mathematics and Introduction to Proofs	3
Choose one of the following:		4
MATH-221	Multivariable and Vector Calculus	
MATH-221H	Honors Multivariable and Vector Calculus	
MATH-231	Differential Equations	3
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honor Linear Algebra	
MATH-251	Probability and Statistics I	3
MATH-399	Mathematical Science Job Search Seminar	0
STAT-257	Statistical Inference	3
	General Education - Immersion 1, 2	6
	General Education - Global Perspective	3
	General Education - Social Perspective	3
Third Year		
STAT-305	Regression Analysis	3
STAT-325	Design of Experiments (WI-PR)	3
	Open Electives	9
	General Education - Immersion 3	3
	Program Electives‡	12
Fourth Year		
MATH-606	Graduate Seminar I	1
MATH-607	Graduate Seminar II	1
STAT-405	Mathematical Statistics I	3
STAT-406	Mathematical Statistics II	3
STAT-500	Senior Capstone in Statistics (WI-PR)	3
STAT-501	Experiential Learning Requirement in Statistics	0
	Math Graduate Core Courses	9
	General Education - Electives	9
	Open Elective	3
Fifth Year		
MATH-790	Research & Thesis	4
	Graduate Electives	15
Total Semester Credit Hours		**144**

Please see General Education Curriculum for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).
‡ The four program electives must be from the following list of courses: Actuarial Mathematics (MATH-255), Topics in Mathematics of Finance (MATH-261), Stochastic Processes (MATH-505), Introduction to Time Series (STAT-335), Nonparametric Statistics (STAT-345), Multivariate Analysis (STAT-425), Statistical Software - R (STAT-511), Statistical Quality Control (STAT-521), Data Mining (STAT-547), Survey Design and Analysis (STAT-572), Categorical Data Analysis (STAT-584). A program elective is any MATH or STAT course with a course number higher than 250.

Applied Statistics and Data Analytics, BS degree/ Applied Statistics, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
ISCH-110	Principles of Computing	3
MATH-181	General Education – Mathematical Perspective A: Project-Based Calculus I	4
MATH-182	General Education – Mathematical Perspective B: Project-Based Calculus II	4
MATH-199	Mathematics and Statistics Seminar I	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective†	4
	General Education – Scientific Principles Perspective†	4
Second Year		
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-251	Probability and Statistics	3
MATH-399	Mathematical Science Job Search Seminar	0
STAT-257	Statistical Inference	3
Choose one of the following:		4
MATH-221	General Education – Elective: Multivariable and Vector Calculus	
MATH-221H	General Education – Elective: Honors Multivariable and Vector Calculus	
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Elective	3
	General Education - Immersion 1	3
	Open Elective	3
Third Year		
STAT-641	Applied Linear Models - Regression	3
STAT-642	Applied Linear Models - ANOVA	3
	General Education – Immersion 2,3	6
	General Education – Electives	6
	Program Electives‡	12
Fourth Year		
STAT-405	Mathematical Statistics I	3
STAT-406	Mathematical Statistics II	3
STAT-500	Senior Capstone in Statistics (WI-PR)	3
STAT-501	Experiential Learning Requirement in Statistics	0
	Program Electives‡	6
	Statistics Graduate Elective	3
	General Education – Electives	3
	Open Electives	9
Fifth Year		
STAT-631	Foundations of Statistics	3
STAT-790	Capstone Thesis/Project	3
	Statistics Graduate Electives	15
Total Semester Credit Hours		**144**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).
‡ Three of the six program electives must be from the following list of courses: Actuarial Mathematics (MATH-255), Topics in Mathematics of Finance (MATH-261), Stochastic Processes (MATH-505), Introduction to Time Series (STAT-335), Nonparametric Statistics (STAT-345), Multivariate Analysis (STAT-425), Statistical Software - R (STAT-511), Statistical Quality Control (STAT-521), Data Mining (STAT-547), Survey Design and Analysis (STAT-572), Categorical Data Analysis (STAT-584). A program elective is any MATH or STAT course with a course number higher than 250.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are recommended.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, physics, math, and chemistry

Appropriate associate degree programs for transfer

AS degree in liberal arts with math/science option

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Biochemistry, BS

www.rit.edu/study/biochemistry-bs
Michael Heagy, Professor
585-475-2090, mdhsch@rit.edu

Program overview

Biochemists focus on the chemistry of life. The biochemistry major provides knowledge in chemistry, biochemistry, and biology which will prepare you to consider real-world problems from a variety of perspectives. You will be able to immediately contribute your skills in corporate, health care, or government positions. You will also be ready to enter professional education in medicine or other health-related fields or attend graduate programs in a variety of chemical and life sciences related programs.

Biochemistry majors often have an interest in combining the life and health sciences with a chemistry degree. You'll take a year of general biology in addition to a typical chemistry curriculum. During the upper-level years, you'll take a substantial core of courses in biochemistry, physical chemistry, the liberal arts, and elective courses in life sciences. You must take a minimum of two upper-division biology electives.

Employment opportunities for biochemistry students are available in the chemical, pharmaceutical, agricultural, forensic, and rapidly expanding biotechnological fields. You'll also be well-prepared to enter advanced degree programs in biochemistry, medicine, pharmacy, dentistry, and veterinary medicine.

Nature of Work

Employment opportunities for biochemistry graduates exist in the chemical, pharmaceutical, agricultural, forensic, and rapidly expanding biotechnological fields. Graduates also are well-prepared to enter advanced degree programs in biochemistry, medicine, pharmacy, dentistry, and veterinary medicine.

Training/Qualifications

Biochemistry students who graduate with a BS degree are qualified for positions working at the bench in the pharmaceutical industry, medical research organizations, and environmental quality labs. According to the profile for biochemists in the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook, many biochemistry students progress to earn more advanced degrees, sometimes combining their technical expertise with a law degree or an MBA to forge a new career path. Biochemists need a doctorate to work in independent research and development positions. Most holders of doctorate degrees begin their careers in temporary postdoctoral research positions. During their postdoctoral appointments, they work with experienced scientists, as they continue to learn about their specialties or develop a broader understanding of related areas of research. Postdoctoral positions frequently offer the opportunity to publish research findings. A solid record of published research is essential to get a permanent position doing basic research, especially for those seeking a permanent college or university faculty position. A significant number of our graduates have gone on to accept faculty appointments at numerous universities.

Advanced Degrees

Chemistry and materials science and engineering graduate programs offered by the School of Chemistry and Materials Science prepare professional scientists by offering curricula that allow students to specialize in their chosen fields while engaging in rigorous, meaningful research using state-of-the-art instrumentation and facilities, under the guidance

of a faculty mentor. The school offers the following advanced degrees: an advanced certificate in materials science and engineering, and master of science degrees in chemistry and materials science and engineering.

Premedical and Health Professions Advisory Program

Medical schools and graduate programs in the health professions (such as physician assistant, physical therapy, and occupational therapy) welcome applications from students majoring in a wide range of academic programs. Acceptance into these programs requires the completion of pre-med requirements such as course work in biological and physical sciences, a strong academic record, pertinent experiences in the field, and key intrapersonal and interpersonal capabilities. Learn more about how RIT's Premedical and Health Professions Advisory Program can help you become a competitive candidate for admission to graduate programs in the medical and health professions.

Pre-Vet Advising Program

Occupations in veterinary medicine are expected to grow three times faster than all other occupations between 2016 and 2026. If you're interested in caring for animals, conducting research related to animal illnesses, or working with livestock in university or government settings, the Pre-Vet Advising Program at RIT can help you reach your career goals. Learn more about RIT's personalized Pre-Vet Advising Program and how it can help you maximize your candidacy for admission to veterinary schools.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education is optional but strongly encouraged for biochemistry majors.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Biochemistry, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems	3
BIOL-124	Introduction to Biology: Molecules and Cells	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells	1
CHEM-171	Advanced General Chemistry I	3
CHEM-172	Advanced General Chemistry II	3
CHEM-175	Advanced General Chemistry I Lab	1
CHEM-176	Advanced General Chemistry II	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-206	Molecular Biology (General Education)	3
BIOL-216	Molecular Biology Laboratory (General Education)	1
BIOL-302	Cell Biology	3
CHMB-402	Biochemistry I	3
CHMO-331	Comprehensive Organic Chemistry I	3
CHMO-332	Comprehensive Organic Chemistry II	3
CHMO-335	Comprehensive Organic Chemistry Lab I	1
CHMO-336	Comprehensive Organic Chemistry II	1
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Artistic Perspective	3
	General Education – Immersion 1,2	6
Third Year		
CHMA-211	Quantitative Analysis	3
CHMA-215	Analytical Methods Lab	1
CHMB-405	Biochemistry Lab (WI-PR)	3
CHMP-331	Physical Chemistry for Life Sciences	3
PHYS-111	College Physics I (General Education – Natural Science Inquiry Perspective)	4
PHYS-112	College Physics II (General Education – Scientific Principles Perspective)	4
	Advanced Biochemistry Elective (A)*	3
	General Education – Social Perspective	3
	General Education – Immersion 3	3
	Open Elective	3
Fourth Year		
	Advanced Biochemistry Elective (A)*	3
	Advanced Biology Elective (B)*	3
	Chemistry Elective (C)*	3
	Open Electives	12
	General Education – Electives	6
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
* Students must complete 6 credits from List A, 6 credits from List B, and 3 credits from List C.

Electives

List A

COURSE	
CHMA-740	Practical NMR
CHMB-403	Biochemistry II
CHMB-489	Advanced Special Topics
CHMB-498	Advanced Biochemistry Independent Study
CHMB-460	Infectious Disease: Impact Society and Culture
CHMB-610	Advanced Protein Biochemistry: Structure and Function
CHMB-702	Protein Conformation and Dynamics
CHMB-704	Advanced Nucleic Acids Biochemistry; Structure and Function

List B

COURSE	
BIOL-218	Biology of Plants
BIOL-265	Evolutionary Biology
BIOL-305	Plants, Medicine and Technology
BIOL-306	Food Microbiology
BIOL-311	Introduction to Microbiology
BIOL-321	Genetics
BIOL-322	Developmental Biology
BIOL-340	Genomics
BIOL-375	Immunology
BIOL-401	Biological Separations: Principles and Practices
BIOL-403	Fundamentals of Plant Biochemistry and Pathology
BIOL-404	Microbiology of Fermentation
BIOL-408	Biology of Cancer
BIOL-412	Human Genetics
BIOL-415	Virology
BIOL-416	Plant Biotechnology
BIOL-418	Plant Molecular Biology
BIOL-420	Bacterial-Host Interactions: Mircobiomes of the World
BIOL-427	Microbial and Viral Genetics
BIOL-441	Genetic Engineering and Synthetic Biology
MEDS-250	Human Anatomy and Physiology
MEDS-251	Human Anatomy and Physiology II

List C

COURSE	
CHEM-401	Marcomolecular, Supramolecular, Nanoscale
CHEM-489	Advanced Special Topics
CHEM-498	Advanced Chemistry Independent Study
CHMA-311	Instrumental Analysis
CHMA-621	Advanced Instrumental Analysis Lab
CHMA-650	Chemical Separations and Mass Spectrometry
CHMA-670	Advanced Concepts of Environmental Chemistry
CHMI-311	Introduction to Microbiology
CHMI-351	Descriptive Inorganic Chemistry
CHMI-564	Structural Inorganic Chemistry
CHMO-636	Spectrometric Identification of Organic Compounds
CHMO-637	Advanced Organic Chemistry
CHPO-706	Polymer Synthesis

Accreditation

The biochemistry program is approved by the American Chemical Society (ACS) and also follows the guidelines of the American Society for Biochemistry and Molecular Biology.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is recommended.
- 2-3 years of science is required and must include biology and chemistry.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, physics, math, and chemistry

Appropriate associate degree programs for transfer

AS degree in liberal arts with chemistry option; chemical technology, laboratory technology

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Bioinformatics and Computational Biology, BS

www.rit.edu/study/bioinformatics-and-computational-biology-bs
L. Kate Wright, Professor
585-475-4669, lkwsbi@rit.edu

Program overview

Bioinformatics is the intersection of biology and computer science. In this major, you'll analyze big data collected by the healthcare industry to discover, diagnose, and treat a wide range of medical conditions. A rapidly growing field that requires professionals to possess problem-solving skills, you'll gain hands-on learning through distinct undergraduate research opportunities. Graduates pursue graduate degrees and go on to successful careers in bioinformatics software development, biomedical research, biotechnology, comparative genomics, genomics, molecular imaging, pharmaceutical research and development, proteomics, and vaccine development.

Bioinformaticists use computers to analyze, organize, and visualize biological data in ways that increase the understanding of this data and lead to new discoveries. In laboratory exercises and assignments, you'll learn to sequence DNA and use computer programs to analyze DNA sequences and predict molecular models.

The bioinformatics degree was developed by faculty in the departments of biological sciences, chemistry, computer science, mathematics and statistics, and information technology, with the guidance from leaders in the bioinformatics and biotechnology industries. The major meets the needs of prospective employers in this challenging and rapidly changing and growing field.

Bioinformatics is a field that has been developing over the last thirty years. It is a discipline that represents a marriage between biotechnology and computer technologies and has evolved through the convergence of advances in each of these fields. Today bioinformatics is a field that encompasses all aspects of the application of computer technologies to biological data. Computers are used to organize, link, analyze and visualize complex sets of biological data.

With the advent of high-throughput technologies such as Next Generation Sequencing and proteomics, bioinformatics has become essential to the biological sciences in general. In the past, laboratories were able to manage and analyze their experimental data in spreadsheets. Many research labs now require the expertise of dedicated bioinformatics core centers or their own in-house bioinformaticists.

Graduates of our programs have entered such laboratories, both in industry and academia, as bioinformaticists. Some have also gone on to leverage their biotechnology experiences as wet lab experimentalists themselves. The diversity of skills our students cultivate has given them access to a wide range of career choices.

Nature of Work

Bioinformatics jobs come with several different areas of focus, which are less strictly hierarchical than bioscience discovery research jobs. The analyst/programmer job provides more focused computational analysis support. Analyst/programmers design and develop software, databases, and interfaces used to analyze and manipulate genomic databases. They collaborate with production to develop high-throughput data processing and analysis capability and to design and implement data queries, novel algorithms, and/or visualization techniques. Analyst/programmers also maintain large-scale DNA databases, prepare data for other scientists, monitor new data from integrating sequence-based/ functional knowledge about genes to help scientists analyze and interpret gene-expression data. They also analyze DNA information and identify opportunities for innovative solutions to analyze and manage biological data. In addition, they often assist in developing software and custom scripts to automate data retrieval, manipulation, and analysis; application of statistics; and visualization tools. (Source: Vault Career Guide to Biotech; The Jobs in Lab Research)

Training/Qualifications

Within the bioinformatics field employers tend to look for the following skills/strengths: fundamental training/knowledge in molecular biology, biochemistry and biotechnology, particularly, genomics, relational database administration, and programming skills/e.g. using SQL, PERL, C, C++, etc. on a UNIX operating system, strong analytical abilities using relevant mathematical/statistical tools, a strong interest in utilizing computational skills to leverage the data outcomes of those working in the laboratory, meticulous, independent, patient to do the same task repetitively and multitask.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Students in the bioinformatics and computational biology degree are required to complete one cooperative education experience.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Bioinformatics and Computational Biology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems (General Education)	3
BIOL-124	Introduction to Biology: Molecules and Cells (General Education)	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems (General Education)	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells (General Education)	1
BIOL-130	Introduction to Bioinformatics	3
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education)	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-135	Introduction to Bioinformatics Programming	3
BIOL-206	Molecular Biology	3
BIOL-216	Molecular Biology Laboratory	1
BIOL-230	Bioinformatics Languages	3
BIOL-321	Genetics	3
CHMO-231	Organic Chemistry I (General Education)	3
CHMO-235	Organic Chemistry Lab I (General Education)	1
MATH-190	Discrete Mathematics for Computing (General Education)	3
STAT-145	Introduction to Statistics I (General Education)	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
Third Year		
BIOL-235	Fundamentals of Bioinformatics Programming	3
BIOL-296	Ethical Issues in Biology and Medicine	3
BIOL-327	Fundamental Bioinformatics Analysis	3
BIOL-499	Biology Co-op (summer)	0
BIOL-550	High Throughput Sequencing Analysis (WI-PR)	3
CHMB-402	Biochemistry I	3
ISTE-230	Introduction to Database and Data Modeling	3
	General Education – Social Perspective	3
	General Education – Immersion 1, 2	6
	Open Elective	3
Fourth Year		
BIOL-340	Genomics	4
BIOL-470	Statistical Analysis for Bioinformatics	3
BIOL-500	Experiential Learning Requirement in Life Sciences	0
BIOL-530	Bioinformatics Algorithms	3
BIOL-594	Molecular Modeling and Proteomics	3
	General Education – Immersion 3	3
	General Education – Elective	3
	Open Electives	9
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Molecular Bioscience and Biotechnology Electives

COURSE	
BIOL-302	Cell Biology
BIOL-305	Plants, Medicine & Technology
BIOL-306	Food Microbiology
BIOL-307	Microbiology of Wastewater
BIOL-310	Bioenergy: Microbial Production
BIOL-311	Introduction to Microbiology
BIOL-322	Developmental Biology
BIOL-335	Phage Biology
BIOL-345	Molecular Ecology (WI-PR)
BIOL-365	Introduction to Population Genetics
BIOL-380	Bioremediation
BIOL-404	Microbiology of Fermentation
BIOL-412	Human Genetics (WI-PR)
BIOL-416	Plant Biotechnology
BIOL-418	Plant Molecular Biology
BIOL-420	Bacterial-Host Interactions: Microbiomes of the World
BIOL-427	Microbial and Viral Genetics
BIOL-441	Genetic Engineering and Synthetic Biology (WI-PR)
BIOL-471	Environmental Microbiology
BIOL-495	Advanced Biology Research
BIOL-498	Advanced Independent Study
BIOL-599	Research Based Writing (WI-PR)
BIOL-601	Genetic Disease and Disorders
CHMA-222	Chemical Separations
CHMB-460	Infectious Diseases: Impact Society & Culture

The molecular genetics option is no longer accepting applications for admission.

Bioinformatics and Computational Biology (molecular genetics option), BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-121	Introductory Biology I (General Education – Elective)	4
BIOL-122	Introductory Biology II (General Education – Elective)	4
BIOL-130	Introduction to Bioinformatics	3
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry Lab I (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry Lab II (General Education – Scientific Principles Perspective)	1
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-135	Introduction to Bioinformatics Programming	3
BIOL-202	Molecular Biology	4
BIOL-230	Bioinformatics Languages	3
BIOL-321	Genetics	3
CHMO-231	Organic Chemistry I (General Education – Elective)	3
CHMO-232	Organic Chemistry II (General Education – Elective)	3
CHMO-235	Organic Chemistry Lab I (General Education – Elective)	1
CHMO-236	Organic Chemistry Lab II (General Education – Elective)	1
STAT-145	Introduction to Statistics I (General Education – Elective)	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
Third Year		
BIOL-235	Fundamentals of Bioinformatics Programming	3
BIOL-327	Fundamental Bioinformatics Analysis	3
BIOL-470	Statistical Analysis for Bioinformatics	3
BIOL-499	Biology Co-op (summer)	0
BIOL-550	Throughput Sequencing Analysis (WI-PR)	3
CHMB-402	Biochemistry I (General Education – Elective)	3
ISTE-230	Introduction to Database and Data Modeling	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
	General Education – Immersion 1	3
Fourth Year		
BIOL-340	Genomics	4
	Molecular Bioscience and Biotechnology Electives	11
	General Education – Immersion 2, 3	6
	Open Electives	12
Total Semester Credit Hours		**120**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Bioinformatics and Computational Biology, BS/ Bioinformatics, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems (General Education – Elective)	3
BIOL-124	Introduction to Biology: Molecules and Cells (General Education – Elective)	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems (General Education – Elective)	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells (General Education – Elective)	1
BIOL-130	Introduction to Bioinformatics	3
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	1
MATH-181	Project-Based Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Project-Based Calculus II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-135	Introduction to Bioinformatics Programming	3
BIOL-206	Molecular Biology	3
BIOL-216	Molecular Biology Laboratory	1
BIOL-230	Bioinformatics Languages	3
BIOL-321	Genetics	3
CHMO-231	Organic Chemistry I (General Education – Elective)	3
CHMO-235	Organic Chemistry Lab I (General Education – Elective)	1
MATH-190	Discrete Mathematics for Computing (General Education – Elective)	3
STAT-145	Introduction to Statistics I (General Education – Elective)	3
	General Education – Artistic Perspective	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
BIOL-235	Fundamentals of Bioinformatics Programming	3
BIOL-296	Ethical Issues in Biology and Medicine	3
BIOL-327	Fundamental Bioinformatics Analysis	3
BIOL-499	Biology Co-op (summer)	0
BIOL-550	High Throughput Sequencing Analysis (WI-PR)	3
CHMB-402	Biochemistry I	3
ISTE-230	Introduction to Database and Data Modeling	3
	General Education – Social Perspective	3
	General Education – Immersion 1, 2	6
	Open Elective	3
Fourth Year		
BIOL-340	Genomics	4
BIOL-470	Statistical Analysis for Bioinformatics	3
BIOL-500	Experiential Learning Requirement in Life Sciences	0
BIOL-630	Bioinformatics Algorithms	3
BIOL-694	Molecular Modeling and Proteomics	3
BIOL-790	Research and Thesis	2
	Open Electives	9
	General Education – Immersion 3	3
	General Education – Elective	3
Fifth Year		
BIOL-625	Ethics in Bioinformatics	3
BIOL-635	Bioinformatics Seminar	3
BIOL-672	Computational Statistics and Data Science Methods	3
BIOL-790	Research and Thesis	4
	Graduate Program Electives‡	9
Total Semester Credit Hours		**144**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Graduate electives may be any graduate-level course related to the field of bioinformatics. Consult academic advisers for assistance in course selection.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is recommended.
- 2-3 years of science is required and must include biology and chemistry.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, math, and computing

Appropriate associate degree programs for transfer

AS degree in biotechnology or liberal arts with biology

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Biology, BS

www.rit.edu/study/biology-bs
L. Kate Wright, Professor
585-475-4669, lkwsbi@rit.edu

Program overview

Biology encompasses all of the processes and patterns that characterize living cells, organisms, and ecosystems. Building on recent advances in the molecular, cellular, and ecological disciplines, modern biological science offers students a rich framework that can launch a career with a wide variety of skills for discoveries within cells, organ systems, species, and even ecosystems in which we live. Scientific knowledge is based on research, and students are encouraged to undertake significant research projects to enhance their educational experience and prepare them for graduate school or full-time employment.

Biologists may investigate the conservation of animals and plants, study interactions between living organisms with the changing environment, uncover evolutionary relationships between different organisms, learn how living systems work or even work with the public to increase awareness of important health and environmental issues.

In the College of Science, biology is something that students do, rather than something they merely learn. Courses present biology and the hands-on laboratory work and field experiences as it is done by career biologists, and hands-on laboratory and field experience is emphasized.

The major includes all of the course work and support services to prepare you to pursue advanced degrees in medicine, dentistry, veterinary medicine, optometry, podiatry, and chiropractic medicine, as well as a wide range of graduate programs in the life sciences.

Course of Study

You'll start with foundation courses in biology, math, chemistry, and liberal arts and then immerse yourself in the biological sciences, studying animals, micro-organisms, and plants at the level of molecules, cells, tissues, organisms, populations, and the environment. You will acquire a comprehensive set of practical skills, from the proper way to prepare cultures in the lab to the proper way to gather and analyze ecological data in the field.

Nature of Work

Biologists answer important questions about the world by making observations in the natural environment and in the laboratory, collecting and evaluating data and integrating evidence to help solve problems.

Premedical and Health Professions Advisory Program

Medical schools and graduate programs in the health professions (such as physician assistants, physical therapy, and occupational therapy) welcome applications from students majoring in a wide range of academic programs. Acceptance into these programs requires the completion of pre-med requirements such as course work in biological and physical sciences, a strong academic record, pertinent experiences in the field, and key intrapersonal and interpersonal capabilities. Learn more about how RIT's Premedical and Health Professions Advisory Program can help you become a competitive candidate for admission to graduate programs in the medical and health professions.

Pre-Vet Advising Program

Occupations in veterinary medicine are expected to grow three times faster than all other occupations between 2016 and 2026. If you're interested in caring for animals, conducting research related to animal illnesses, or working with livestock in university or government settings, the Pre-Vet Advising Program can help you reach your career goals. Learn more about RIT's personalized Pre-Vet Advising Program and how it can help you maximize your candidacy for admission to veterinary schools.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

As a biology major, you have the option to pursue co-op and internship opportunities in research, lab support, or data analysis in private businesses, government agencies, and non-profit organizations. Biology students have worked for hospitals, wildlife centers, veterinary clinics, food companies, and pharmaceutical firms.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Biology, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems (General Education)	3
BIOL-124	Introduction to Biology: Molecules and Cells (General Education)	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems (General Education)	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells (General Education)	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education)	1
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-206	Molecular Biology (General Education)	3
BIOL-216	Molecular Biology Laboratory (General Education)	1
BIOL-302	Cell Biology	3
BIOL-499	Biology Co-op (summer)*	
CHMO-231	Organic Chemistry I (General Education)	3
CHMO-232	Organic Chemistry II (General Education)	3
CHMO-235	Organic Chemistry Lab I (General Education)	1
CHMO-236	Organic Chemistry Lab II(General Education)	1
Choose one of the following:		3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	
STAT-155	Introduction to Biostatistics (General Education – Mathematical Perspective B)	
Choose one of the following:		4
BIOL-240	General Ecology (WI-PR)	
BIOL-265	Evolutionary Biology (WI-PR)	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
PHYS-111	College Physics I (General Education)	4
PHYS-112	College Physics II General Education)	4
Choose one of the following:		3
BIOL-321	Genetics	
BIOL-365	Introduction to Population Genetics	
Choose one of the following:		4
BIOL-322	Developmental Biology	
BIOL-313	Comparative Animal Physiology	
	Program Electives	12
	Open Elective	3
	General Education – Immersion 1	3
Fourth Year		
BIOL-500	Experiential Learning Requirement in Life Science	0
	Program Electives	17
	Open Electives	9
	General Education – Immersion 2, 3	6
Total Semester Credit Hours		**122**

* Biology Co-op is for co-op track students only.
Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Biology Electives

COURSE	
BIOL-205	Animal Behavior
BIOL-207	Galapagos: Ecology and Evolution
BIOL-211	Invertebrate Zoology
BIOL-212	Vertebrate Zoology
BIOL-218	Biology of Plants
BIOL-220	Biology of Fungi and Insects
BIOL-230	Bioinformatics Languages
BIOL-296	Ethical Issues in Biology and Medicine
BIOL-305	Plants, Medicine, and Technology
BIOL-306	Food Microbiology
BIOL-309	Comparative Vertebrate Anatomy
BIOL-311	Introduction to Microbiology
BIOL-315	Tissue Culture Laboratory
BIOL-327	Fundamental Bioinformatics Analysis
BIOL-335	Phage Biology
BIOL-340	Genomics
BIOL-343	Tropical Ecology
BIOL-345	Molecular Ecology
BIOL-371	Freshwater Ecology
BIOL-372	Biology without Walls
BIOL-375	Advanced Immunology
BIOL-385	Seneca Park Zoo Internship
BIOL-401	Biological Separations: Principles and Practices
BIOL-403	Fundamentals of Plant Biochemistry and Pathology
BIOL-404	Microbiology of Fermentation
BIOL-408	Biology of Cancer (WI-PR)
BIOL-412	Human Genetics (WI-PR)
BIOL-414	Animal Nutrition
BIOL-415	Virology
BIOL-416	Plant Biotechnology
BIOL-418	Plant Molecular Biology
BIOL-420	Bacterial-Host Interactions: Microbiomes of the World
BIOL-427	Microbial and Viral Genetics (WI-PR, WI-GE)
BIOL-428	Eukaryotic Gene Regulation and Disease
BIOL-441	Genetic Engineering and Synthetic Biology (WI-PR)
BIOL-444	Ornithology
BIOL-455	Biogeography
BIOL-460	Infections Diseases: Impact on Society and Culture
BIOL-471	Environmental Microbiology
BIOL-495	Advanced Biology Research
BIOL-498	Advanced Biology Independent Study
BIOL-530	Bioinformatics Algorithms
BIOL-550	High Throughput Sequencing Analysis (WI-PR)
BIOL-573	Marine Biology
BIOL-575	Conservation Biology
BIOL-594	Molecular Modeling and Proteomics
BIOL-599	Research Based Writing (WI-PR)
BIOL-601	Genetic Diseases and Disorders
BIOL-635	Bioinformatics Seminar
BIOL-694	Molecular Modeling and Proteomics
CHMA-650	Separations and Mass Spectroscopy in Biological Chemistry
CHMB-402	Biochemistry I
ENVS-250	Applications of Geographic Information Systems
ENVS-301	Environmental Science Field Skills
ENVS-311	Wetlands
ENVS-531	Climate Change: Science, Technology & Policy
ENVS-540	Ecological Models in GIS
ENVS-640	Ecological Models in GIS
MEDS-245	Medical Genetics
MEDS-250	Human Anatomy and Physiology I
MEDS-251	Human Anatomy and Physiology II
MEDS-310	Introduction to Pharmacology
MEDS-313	Introduction to Infectious Diseases
MEDS-421	Parasitology
MEDS-422	Endocrinology
MEDS-490	Human Gross Anatomy
MEDS-515	Medical Pathophysiology
MEDS-520	Histology & Histopathology
MEDS-530	Human Immunology

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Biology, BS degree/Environmental Science, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems (General Education – Elective)	3
BIOL-124	Introduction to Biology: Molecules and Cells (General Education – Elective)	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems (General Education – Elective)	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells (General Education – Elective)	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab General Education – Natural Science Inquiry Perspective	1
CHMG-146	General Education – Scientific Principles Perspective: General & Analytical Chemistry II Lab	1
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-206	Molecular Biology (General Education – Elective)	3
BIOL-216	Molecular Biology Laboratory (General Education – Elective)	1
BIOL-302	Cell Biology	3
BIOL-499	Biology Co-op (summer)*	0
CHMO-231	Organic Chemistry I (General Education – Elective)	3
CHMO-232	Organic Chemistry II (General Education – Elective)	3
CHMO-235	Organic Chemistry I Lab (General Education – Elective)	1
CHMO-236	Organic Chemistry II Lab (General Education – Elective)	1
Choose one of the following:		3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	
STAT-155	Introduction to Biostatistics (General Education – Mathematical Perspective B)	
Choose one of the following:		4
BIOL-240	General Ecology (WI-PR)	
BIOL-265	Evolutionary Biology (WI-PR)	
	General Education – Global Perspective	3
	General Education – Ethical Perspective	3
	Open Elective	3
Third Year		
PHYS-111	College Physics I (General Education – Elective)	4
PHYS-112	College Physics II (General Education – Elective)	4
Choose one of the following:		3
BIOL-321	Genetics	
BIOL-365	Introduction to Population Genetics	
Choose one of the following:		4
BIOL-322	Developmental Biology	
BIOL-313	Comparative Animal Physiology	
	Program Electives	12
	Open Elective	3
	General Education – Immersion 1	3
Fourth Year		
BIOL-500	Experiential Learning Requirement in Life Science	0
ENVS-601	Environmental Science Graduate Studies I	2
ENVS-602	Environmental Science Graduate Studies II	1
	Program Elective/Graduate Professional Elective	3
	Program Elective/ Graduate Science Core	3
	Program Elective	11
	Open Elective	6
	General Education – Immersion 2, 3	6
Fifth Year		
ENVS-795	Environmental Science Graduate Research	3
Choose one of the following:		6
ENVS-780	Environmental Science Project	
ENVS-790	Environmental Science Thesis	
	Graduate Professional Elective	3
	Graduate Public Policy/STSO Elective	3
	Graduate Statistics Elective	3
	Graduate GIS Elective	3
Total Semester Credit Hours		**146**

*Biology Co-op for co-op track students.
Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is recommended.
- 2-3 years of science is required and must include biology and chemistry.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, and math

Appropriate associate degree programs for transfer

AS degree in biology or liberal arts with biology option

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Biotechnology and Molecular Bioscience, BS

www.rit.edu/study/biotechnology-and-molecular-bioscience-bs

L. Kate Wright, Professor
585-475-4669, lkwsbi@rit.edu

Program overview

The biotechnology degree prepares you to immediately assume challenging positions in research, development, and management in the fields of plant biotechnology, human genetics, agriculture, food products, pharmaceuticals and vaccine development, environment and energy, forensic science, and genetic counseling. Meaningful research projects preparing you to gain valuable experience for full-time employment or to pursue graduate study.

The advanced nature of the third- and fourth-year courses, as well as the opportunity to participate in faculty-sponsored undergraduate research, provide a sound foundation to those students wishing to pursue a master's or doctoral degree. The major also can be designed to include the education necessary for the pursuit of a career in the medical field.

Specialized areas of emphasis include recombinant DNA, microbial and plant genetic engineering, mammalian and plant tissue culture, monoclonal antibody production and purification, large-scale fermentation techniques (bacterial and mammalian cell), and methods for characterization and separation of proteins and nucleic acids in yeast, bacterial, viral, and plant systems.

As a student enrolled in the biotechnology and molecular bioscience program at RIT you'll be exposed to dynamic professors who are leaders in their fields both in the classroom and in the laboratory.

Plan of Study

Building on a core of biology, chemistry, math, and liberal arts, the courses in this major are taught from a molecular bioscience perspective and are focused on the central genetic dogma of molecular biology. The curriculum explores the rapidly-expanding field of genetic engineering and almost unlimited potential that controlled genetic experiments hold for improving the quality of life. Specialized areas of interest include recombinant DNA, mammalian and plant tissue culture, and monoclonal antibody production.

Real World Experiences

Undergraduate research is strongly encouraged and strengthens your preparation for graduate study or employment. You're encouraged to participate in undergraduate research experience under the guidance of faculty mentors. You're also encouraged to apply for summer research internships both here at RIT and at other institutions.

You also have the option to pursue cooperative education experience in research, lab support, or data analysis in private businesses, government agencies, and non-profit organizations. Biotechnology and molecular biosciences students have worked at pharmaceutical companies, academic research laboratories, biotechnology companies, and national laboratories.

Nature of Work

Do you want to learn about the natural world on a molecular level? Do you want to learn how cells and living organisms can be harnessed to improve scientific knowledge and human health? Biotechnology is the area of science that uses living systems to create products and new technologies. Biotechnologists play important roles in biomedical research, agriculture, food safety, pharmaceutical and vaccine development, and more.

Advantages

The biotechnology and molecular bioscience program prepares our graduates for post-secondary education, employment in biotech and research laboratories, and for medical school.

Pre-Vet Advising Program

Occupations in veterinary medicine are expected to grow three times faster than all other occupations between 2016 and 2026. If you're interested in caring for animals, conducting research related to animal illnesses, or working with livestock in university or government settings, the Pre-Vet Advising Program at RIT can help you reach your career goals. Learn more about RIT's personalized Pre-Vet Advising Program and how it can help you maximize your candidacy for admission to veterinary schools.

Premedical and Health Professions Advisory Program

Medical schools and graduate programs in the health professions (such as physician assistants, physical therapy, and occupational therapy) welcome applications from students majoring in a wide range of academic programs. Acceptance into these programs requires the completion of pre-med requirements such as course work in biological and physical sciences, a strong academic record, pertinent experiences in the field, and key intrapersonal and interpersonal capabilities. Learn more about how RIT's Premedical and Health Professions Advisory Program can help you become a competitive candidate for admission to graduate programs in the medical and health professions.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Research Internships

Research internships, offered both on and off-campus, take place during the summer. RIT offers numerous opportunities for students to participate in research, including three on-campus summer programs: Research Experiences for Undergraduates (REU), Summer Undergraduate Research Fellowships (SURF), and the Summer Undergraduate Research Programs (SURP). Many students participate in undergraduate research for course credit during the academic year.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Biotechnology and Molecular Bioscience, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems	3
BIOL-124	Introduction to Biology: Molecules and Cells	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	1
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-206	Molecular Biology	3
BIOL-216	Molecular Biology Laboratory	1
BIOL-302	Cell Biology	3
BIOL-311	Introduction to Microbiology	4
BIOL-315	Tissue Culture Laboratory	1
BIOL-499	Biology Co-op (summer)*	0
CHMO-231	Organic Chemistry I (General Education – Elective)	3
CHMO-232	Organic Chemistry II (General Education – Elective)	3
CHMO-235	Organic Chemistry Lab I (General Education – Elective)	1
CHMO-236	Organic Chemistry Lab II (General Education – Elective)	1
Choose one of the following:		3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	
STAT-155	Introduction to Biostatistics (General Education – Mathematical Perspective B)	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
BIOL-321	Genetics	3
BIOL-327	Fundamental Bioinformatics Analysis	3
CHMB-402	Biochemistry I (General Education)	3
	Program Electives	12
	Program Elective (WI-PR)	4
	Open Electives	6
	General Education – Immersion 1	3
Fourth Year		
BIOL-500	Experiential Learning Requirement in Life Science	0
	Program Electives	14
	General Education – Immersion 2, 3	6
	Open Electives	6
	General Education – Elective	3
Total Semester Credit Hours		**121**

*Biology Co-op is for Co-op track students only. Minimum requirement of 30 credits of program electives (List A) of which 24 credits must be lab electives (List B). A maximum of 6 credits of BIOL-495 (Advanced Biology Research) may count for lab elective credit. A maximum of 6 credits of BIOL-495 and BIOL-498 combined may count for program elective credit.

Please see General Education Curriculum (GE) for more information.

One Writing Intensive (WI) elective must be selected to satisfy degree requirements. Please see adviser for a list of eligible courses.

(WI) Refers to a writing intensive course within the major.

Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

List A: Biotechnology and Molecular Bioscience Program Electives

COURSE	
BIOL-220	Biology of Fungi and Insects
BIOL-265	Evolutionary Biology (WI-PR)
BIOL-305	Plants, Medicine and Technology
BIOL-313	Comparative Animal Physiology
BIOL-322	Developmental Biology
BIOL-335	Phage Biology
BIOL-340	Genomics
BIOL-345	Molecular Ecology (WI-PR)
BIOL-365	Introduction to Population Genetics
BIOL-372	Biology without Walls
BIOL-375	Advanced Immunology
BIOL-401	Biological Separations: Principles and Practices
BIOL-403	Fundamentals of Plant Biochemistry and Pathology
BIOL-404	Microbiology of Fermentation
BIOL-408	Biology of Cancer (WI-PR)
BIOL-412	Human Genetics (WI-PR)
BIOL-414	Animal Nutrition
BIOL-415	Virology
BIOL-416	Plant Biotechnology
BIOL-418	Plant Molecular Biology
BIOL-420	Bacterial-Host Interactions: Microbiomes of the World
BIOL-427	Microbial and Viral Genetics (WI-PR)
BIOL-428	Eukaryotic Gene Regulation and Disease
BIOL-441	Genetic Engineering and Synthetic Biology (WI-PR)
BIOL-460	Infectious Disease: Impact on Society and Culture
BIOL-471	Environmental Microbiology
BIOL-495	Advanced Biology Research
BIOL-498	Advanced Biology Independent Study
BIOL-530	Bioinformatics Algorithms
BIOL-550	High Throughput Sequencing Analysis (WI-PR)
BIOL-594	Molecular Modeling and Proteomics
BIOL-599	Research Based Writing (WI-PR)
BIOL-601	Genetic Disease and Disorders
BIOL-625	Ethics in Bioinformatics
BIOL-694	Molecular Modeling and Proteomics
CHMA-650	Separations and Mass Spectroscopy in Biological Chemistry
MEDS-313	Introduction to Infectious Diseases
MEDS-530	Human Immunology

List B: Biotechnology and Molecular Bioscience Program Lab Electives

COURSE	
BIOL-313	Comparative Animal Physiology
BIOL-322	Developmental Biology
BIOL-335	Phage Biology
BIOL-340	Genomics
BIOL-372	Biology without Walls
BIOL-375	Advanced Immunology
BIOL-401	Biological Separations: Principles and Practices
BIOL-403	Fundamentals of Plant Biochemistry and Pathology
BIOL-404	Microbiology of Fermentation
BIOL-416	Plant Biotechnology
BIOL-418	Plant Molecular Biology
BIOL-427	Microbial and Viral Genetics (WI-PR)
BIOL-441	Genetic Engineering and Synthetic Biology (WI-PR)
BIOL-471	Environmental Microbiology
BIOL-495	Advanced Biology Research
BIOL-550	High Throughput Sequencing Analysis (WI-PR)
BIOL-594	Molecular Modeling and Proteomics
BIOL-599	Research Based Writing (WI-PR)
BIOL-601	Genetic Disease and Disorders
BIOL-625	Ethics in Bioinformatics
BIOL-694	Molecular Modeling and Proteomics
CHMA-650	Separations and Mass Spectroscopy in Biological Chemistry

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Biotechnology and Molecular Bioscience, BS degree/ Bioinformatics, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems	3
BIOL-124	Introduction to Biology: Molecules and Cells	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	1
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Social Perspective	3
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-206	Molecular Biology	3
BIOL-216	Molecular Biology Laboratory	1
BIOL-302	Cell Biology	3
BIOL-311	Introduction to Microbiology	4
BIOL-315	Tissue Culture Laboratory	1
BIOL-499	Biology Co-op*	
CHMO-231	Organic Chemistry I (General Education)	3
CHMO-232	Organic Chemistry II (General Education)	3
CHMO-235	Organic Chemistry Lab I (General Education)	1
CHMO-236	Organic Chemistry Lab II (General Education)	1
Choose one of the following:		3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	
STAT-155	Introduction to Biostatistics (General Education – Mathematical Perspective B)	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
BIOL-321	Genetics	3
BIOL-327	Fundamentals of Bioinformatics Analysis	3
CHMB-402	Biochemistry I (General Education)	3
	Program Electives	10
	Open Electives	6
	Program Elective (WI-PR)	3
	General Education – Immersion 1	3
Fourth Year		
BIOL-500	Experiential Learning Requirement in Life Science	0
BIOL-625	Ethics in Bioinformatics	3
BIOL-694	Molecular Model and Proteomics	3
BIOL-790	Research and Thesis	2
	Program Electives	11
	General Education – Immersion 2, 3	6
	Open Electives	6
	General Education – Elective	3
Fifth Year		
BIOL-630	Bioinformatics Algorithms	3
BIOL-635	Bioinformatics Seminar	3
BIOL-672	Computational Statistics and Data Science Methods	3
BIOL-790	Research and Thesis	4
	Graduate Electives†	9
Total Semester Credit Hours		**145**

*Biology Co-op for co-op track students only.
Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different wellness courses.
† Any graduate level course deemed related to the field of bioinformatics by the program director.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is recommended.
- 2-3 years of science is required and must include biology and chemistry.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, math, and computing

Appropriate associate degree programs for transfer

AS degree in biotechnology or liberal arts with biology

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Chemistry, BS

www.rit.edu/study/chemistry-bs
Michael Heagy, Professor
585-475-2090, mdhsch@rit.edu

Program overview

Chemistry is the science of the structure, properties, and reactions of matter. Chemists seek to understand matter at the molecular and atomic levels. Knowledge of chemistry is fundamental to an understanding of biology, biochemistry, geology and medicine, and areas of astronomy, physics, and engineering. RIT's chemistry degree prepares you for work in all areas of chemistry. You will be prepared for a wide variety of professional positions in industrial manufacturing and research, government, pharmaceuticals, and health care. You will also be ready to continue with graduate studies in chemistry or professional education in medicine or other health-related fields.

The American Chemical Society (ACS)-approved chemistry major prepares you for positions in several fields of chemistry, including professional industrial work in processing and laboratory operations, research and experimental work, supervision of technical projects, and managerial positions. A substantial number of students continue their education and earn advanced degrees in chemistry or pursue careers in pharmacy, medicine, and dentistry.

The chemistry major allows for flexibility in the type and number of chemistry and university-wide elective courses you decide to take. The major also provides you with the option of planning an elective concentration in a complementary field such as imaging science, business, graphic arts, psychology, biology, criminal justice, computer science, engineering, environmental science, forensics, mathematics, packaging science, or physics.

Plan of Study

Through courses in general, analytical, physical, organic, and inorganic chemistry, you'll develop a thorough understanding of substances and their chemical properties, how they can be manipulated, and how they can be transformed into new materials. The major offers the chance to choose a concentration or minor in complementary fields such as imaging science, business, technical communication, biology, criminal justice, engineering, environmental science, physics, or mathematics.

Real World Experiences

RIT has a rich history of helping students to gain real-world experience throughout their education. Undergraduate research experiences are available with professors throughout the School of Chemistry and Material Sciences and are highly encouraged. These opportunities enable students to practice real-world lab applications of the information they are currently studying.

Cooperative education is also highly recommended to gain experiences outside of RIT, though not required for graduation. Advisors and the Office of Career Services and Cooperative Education are available to assist in helping you identify and apply to co-op positions.

Nature of Work

Everything in our environment, whether naturally occurring or of human design, is composed of chemicals. Chemists search for and use new knowledge about chemicals. Chemical research has led to the discovery and development of new and improved synthetic fibers, paints, adhesives, drugs, cosmetics, electronic components, lubricants, and thousands of other products. Chemists also develop processes that save energy and reduce pollution, such as improved oil refining and petrochemical processing methods. Research on the chemistry of living things spurs advances in medicine, agriculture, food processing, and other fields. (Source: U.S. Bureau of Labor Statistics Occupational Outlook Handbook)

Training Qualifications

A bachelor's degree in chemistry or a related discipline usually is the minimum educational requirement for entry-level chemist jobs. However, many research jobs require a master's degree. Students planning careers as chemists and materials scientists should take courses in science and mathematics should like working with their hands building scientific apparatus and performing laboratory experiments and should like computer modeling. Perseverance, curiosity, and the ability to concentrate on detail and to work independently are essential. Because research and development (R&D) chemists are increasingly expected to work on interdisciplinary teams, some understanding of other disciplines, including business and marketing or economics, is desirable, along with leadership ability and good oral and written communication skills. Graduate students typically specialize in a subfield of chemistry, such as analytical chemistry or polymer chemistry, depending on their interests and the kind of work they wish to do.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Cooperative education is optional but strongly encouraged for students in the chemistry degree.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and

full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Chemistry, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHEM-171	Advanced General Chemistry I	3
CHEM-172	Advanced General Chemistry II	3
CHEM-175	Advanced General Chemistry I Lab	1
CHEM-176	Advanced General Chemistry II	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
	General Education – Immersion 1	3
Second Year		
CHMA-211	Quantitative Analysis	3
CHMA-215	Analytical Methods Lab	1
CHMB-402	Biochemistry I	3
CHMO-331	Comprehensive Organic Chemistry I	3
CHMO-332	Comprehensive Organic Chemistry II	3
CHMO-335	Comprehensive Organic Chemistry Lab I	1
CHMO-336	Comprehensive Organic Chemistry Lab II	1
MATH-219	Multivariable Calculus (General Education)	3
PHYS-211	University Physics I (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Elective	3
	Open Elective	3
Third Year		
CHMA-311	Instrumental Analysis	3
CHMA-315	Instrumental Analysis Lab	1
CHMP-341	Physical Chemistry I	3
CHMP-342	Physical Chemistry II	3
CHMP-345	Physical Chemistry Lab I	1
CHMP-346	Experimental Physical Chemistry	1
PHYS-212	University Physics II (General Education – Scientific Principles Perspective)	4
	Advanced Chemistry Elective§	3
	General Education – Social Perspective	3
	General Education – Elective	3
	General Education – Immersion 2	3
	Open Electives	3
Fourth Year		
CHEM-401	Macromolecular Supramolecular and Nanoscale Chemistry	3
CHMP-445	Experimental Physical Chemistry (WI-PR)	3
CHMI-564	Structural Inorganic Chemistry	3
	Advanced Chemistry Electives§	6
	General Education – Immersion 3	3
	General Education – Electives	6
	Open Electives	6
Total Semester Credit Hours		**123**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
§ Students must complete 9 credits of Advanced Chemistry credit hours.

Advanced Chemistry Electives List A

COURSE	
CHEM-489	Advanced Special Topics
CHEM-498	Advanced Chemistry Independent Study
CHEM-531	Climate Change Science, Technology & Policy
CHMA-621	Advanced Instrumental Analysis Lab
CHMA-650	Chemical Separations and Mass Spectrometry
CHMA-670	Advanced Concepts of Environmental Chemistry
CHMA-711	Advanced Instrumental Analysis
CHMA-740	Practical NMR
CHMB-405	Biochemistry Lab
CHMB-495	Advanced Biochemistry Research
CHMB-610	Advanced Protein Biochemistry: Structure and Function
CHMB-702	Protein Conformation and Dynamics
CHMB-704	Advanced Nucleic Acids Biochemistry; Structure and Function
CHMI-351	Descriptive Inorganic Chemistry
CHMI-565	Preparative Inorganic Chemistry Lab
CHMO-535	Advanced Techniques in Organic Synthesis
CHMO-636	Spectrometric Identification of Organic Compounds
CHMO-637	Advanced Organic Chemistry
CHMO-640	Mechanisms of Drug Interactions
CHMO-710	Literature Exploration of Organic Synthesis
CHMO-739	Advanced Physical Organic Chemistry
CHMO-750	Survey of Organic Named Reactions
CHMP-751	Colloid & Interface Science
CHMP-752	Molecular Photophysics and Photochemistry
CHMP-753	Computational Chemistry
CHPO-706	Polymer Synthesis
CHPO-707	Polymer Chemistry II

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Chemistry, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHEM-171	Advanced General Chemistry I (General Education – Elective)	3
CHEM-175	Advanced General Chemistry I Lab (General Education – Elective)	1
CHEM-172	Advanced General Chemistry II	3
CHEM-176	Advanced General Chemistry II Lab	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Immersion 1	3
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
Second Year		
CHMA-211	Quantitative Analysis	3
CHMA-215	Analytical Methods Lab	1
CHMB-402	Biochemistry I	3
CHMO-331	Comprehensive Organic Chemistry I	3
CHMO-336	Comprehensive Organic Chemistry Lab I	1
CHMO-332	Comprehensive Organic Chemistry II	3
CHMO-336	Comprehensive Organic Chemistry Lab II	1
MATH-219	General Education – Elective: Multivariable Calculus	3
PHYS-211	General Education – Natural Science Inquiry Perspective: University Physics I	4
	General Education – Global Perspective	3
	General Education – Elective	3
	Open Elective	3
Third Year		
CHEM-499	Chemistry Co-op (summer)*	
CHMA-361	Instrumental Analysis	3
CHMA-315	Instrumental Analysis Lab	1
CHMP-341	Physical Chemistry I	3
CHMP-342	Physical Chemistry II	3
CHMP-345	Physical Chemistry Lab I	1
CHMP-345	Experimental Physical Chemistry (WI-PR)	1
PHYS-212	General Education – Scientific Principles Perspective: University Physics II	4
	Advanced Chemistry Elective	3
	General Education – Social Perspective	3
	General Education – Electives	3
	General Education – Immersion 2	3
	Open Electives	3
Fourth Year		
Choose one of the following:		6
	Graduate Chemistry Focus Course (Project track)	
CHEM-790	Research & Thesis (Thesis track)	
CHEM-401	Macromolecular, Supramolecular, Nanoscale	3
CHEM-500	Experiential Learning Requirement for Chemistry and Biochemistry Programs	0
CHEM-670	Graduate Chemistry Writing	1
CHEM-771	Graduate Chemistry Seminar I	1
CHEM-772	Graduate Chemistry Seminar II	1
CHMI-664	Modern Inorganic Chemistry	3
CHMP-445	Experimental Physical Chemistry	3
	General Education – Immersion 3	3
	General Education – Electives	6
	Open Electives	6
Fifth Year		
CHEM-773	Graduate Chemistry Seminar III	1
CHEM-774	Graduate Chemistry Seminar IV	1
	Approved Chemistry Graduate Courses	12
Choose one of the following:		4
CHEM-780	Chemistry Project	
CHEM-790	Research & Thesis	
Total Semester Credit Hours		**144**

*Chemistry Co-op is for co-op track students only.
Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Chemistry, BS degree/Materials Science and Engineering, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CHEM-171	Advanced General Chemistry I (General Education – Elective)	3
CHEM-175	Advanced General Chemistry I Lab(General Education – Elective)	1
CHEM-172	Advanced General Chemistry II (General Education – Elective)	3
CHEM-176	Advanced General Chemistry II Lab(General Education – Elective)	1
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Ethical Perspective	3
	General Education – Artistic Perspective	3
	General Education – Elective	3
	General Education – Immersion 1	3
	General Education – First-Year Writing (WI)	3
Second Year		
CHMA-211	Quantitative Analysis	3
CHMA-215	Analytical Methods Lab	1
CHMB-402	Biochemistry I	3
CHMO-331	Comprehensive Organic Chemistry I	3
CHMO-335	Comprehensive Organic Chemistry Lab I	1
CHMO-332	Comprehensive Organic Chemistry II	3
CHMO-336	Comprehensive Organic Chemistry Lab II	1
MATH-219	Multivariable Calculus	3
PHYS-211	University Physics I (General Education – Natural Science Inquiry Perspective)	4
	General Education – Global Perspective	3
	General Education – Elective	3
	Open Elective	3
Third Year		
CHMA-311	Instrumental Analysis	3
CHMA-315	Instrumental Analysis Lab	1
CHMP-341	Physical Chemistry I	3
CHMP-342	Physical Chemistry II	3
CHMP-345	Physical Chemistry I Lab	1
CHMP-346	Physical Chemistry II Lab	1
PHYS-212	University Physics II (General Education – Scientific Principles Perspective)	4
	Advanced Chemistry Elective	3
	General Education – Social Perspective	3
	General Education – Immersion 2	3
	General Education – Electives	3
	Open Electives	3
Fourth Year		
CHEM-401	Macromolecular, Supramolecular, Nanoscale	3
CHMI-564	Structural Inorganic Chemistry	3
CHMP-445	Experimental Physical Chemistry (WI-PR)	3
	Advanced Chemistry Elective/MTSE Graduate Elective§	6
	General Education – Immersion 3	3
	General Education – Electives	6
	Open Electives	6
Fifth Year		
MTSE-601	Materials Science	3
MTSE-704	Theoretical Methods in Materials Science and Engineering	3
MTSE-705	Experimental Techniques	3
Choose one of the following:		9
MTSE-777	Graduate Project plus two MTSE Graduate Electives§	
MTSE-790	Research & Thesis	
	MTSE Graduate Elective§	6
Total Semester Credit Hours		**144**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
§ Please see advisor for complete list of elective choices.

Accreditation

The BS degree in chemistry is certified by the Committee on Professional Training of the American Chemical Society.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is recommended.
- 2-3 years of science is required and must include chemistry. Biology is recommended.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, chemistry, math, and physics

Appropriate associate degree programs for transfer

AS degree in liberal arts with chemistry option; chemical technology, laboratory technology

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Computational Mathematics, BS

www.rit.edu/study/computational-mathematics-bs
Joshua Faber, Professor
585-475-5115, jafsma@rit.edu

Program overview

The computational mathematics major combines the beauty and logic of mathematics with the application of today's fastest and most powerful computers. The major uses computers as problem-solving tools to come up with mathematical solutions to real-world problems in engineering, operations research, economics, business, and other areas of science. The skills you learn can be applied to everyday life, from computing security and telecommunication networking to routes for school buses and delivery companies. The computational mathematics major gives you a solid foundation in both mathematics and computational methods that you need to be successful in the field or in graduate school.

Computational mathematics prepares you for a mathematical career that incorporates extensive computer science skills. In this major, much emphasis is given to the use of the computer as a tool to solve mathematically modeled physical problems. Students often pursue positions as mathematical analysts, scientific programmers, software engineers, or systems analysts. Job opportunities in private industry and government abound in this field.

Course of Study

The curriculum provides a foundation in mathematics through courses in calculus, differential equations, graph theory, abstract and linear algebra, mathematical modeling, numerical analysis, and several other areas. Students are required to complete an experiential learning component of the program, as approved by the School of Mathematics and Statistics. Students are encouraged to participate in research opportunities or cooperative education experiences. You will gain extensive computing skills through a number of high-level programming, system design, and other computer science courses.

Nature of Work

Mathematicians use mathematical theory, computational techniques, algorithms, and the latest computer technology to solve economic, scientific, engineering, physics, and business problems.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Although cooperative education is optional for computational mathematics students, it may be used to fulfill the experiential learning component of the program. Students have worked in a variety of settings on problem-solving teams with engineers, biologists, computer scientists, physicists, and marketing specialists.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Computational Mathematics, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-141	Computer Science I (General Education)	4
CSCI-142	Computer Science II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective‡	4
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
Second Year		
CSCI-243	The Mechanics of Programming	3
CSCI-262	Introduction to Computer Science Theory	3
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-231	Differential Equations	3
MATH-251	Probability and Statistics I	3
MATH-399	Mathematical Sciences Job Search Seminar	0
Choose one of the following:		4
MATH-221	Multivariable and Vector Calculus (General Education)	
MATH-221H	Honors Multivariable and Vector Calculus (General Education)	
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Scientific Principles Perspective‡	4
Third Year		
MATH-411	Numerical Analysis	3
MATH-431	Real Variables I	3
	Program Electives†	12
	General Education – Social Perspective	3
	General Education – Immersion 1	3
	General Education – Elective	3
	Open Elective	3
Fourth Year		
MATH-421	Mathematical Modeling (WI-PR)	3
MATH-441	Abstract Algebra I	3
MATH-501	Experiential Learning Requirement in Mathematics	0
	Program Electives†	6
	General Education – Immersion 2, 3	6
	General Education – Elective	3
	Open Elective	9
Total Semester Credit Hours		**122**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

† Three of the program electives must be MATH or STAT courses with course numbers of at least 250, and either Graph Theory (MATH-351) or Numerical Linear Algebra (MATH-412) must be one of the three courses. Three of the program elective courses must be chosen from SWEN-261, MATH-305, ISTE-470, CMPE-570, EEEE-346, EEEE-547, (ISEE-301 or MATH-301), BIOL-235, BIOL-470, PHYS-377, ENGL-581, IGME-386, and CSCI courses numbered at least 250.

‡ Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).

§ Students are required to complete an experiential learning component of the program: MATH-501 Experiential Learning Requirement in Mathematics, as approved by the School of Mathematics and Statistics. Students are urged to fulfill this requirement by participating in research opportunities or co-op experiences; students can also fulfill this requirement by taking MATH-500 Senior Capstone in Mathematics as a program elective.

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Computational Mathematics, BS degree/Applied and Computational Mathematics (thesis option), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-141	Computer Science I (General Education – Elective)	4
CSCI-142	Computer Science II (General Education – Elective)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective‡	4
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
	Open Elective	3
Second Year		
CSCI-243	The Mechanics of Programming	3
CSCI-262	Introduction to Computer Science Theory	3
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-231	Differential Equations	3
MATH-251	Probability and Statistics I	3
MATH-399	Mathematical Sciences Job Search Seminar	0
Choose one of the following:		4
MATH-221	Multivariable and Vector Calculus (General Education – Elective)	
MATH-221H	Honors Multivariable and Vector Calculus (General Education – Elective)	
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Scientific Principles Perspective‡	4
Third Year		
MATH-431	Real Variables I	3
MATH-441	Abstract Algebra I	3
	Program Electives	12
	General Education – Social Perspective	3
	General Education – Immersion 1, 2	6
	General Education – Elective	3
Fourth Year		
MATH-421	Mathematical Modeling (WI-PR)	3
MATH-501	Experiential Learning Requirement in Mathematics	0
MATH-602	Numerical Analysis I	3
MATH-606	Graduate Seminar I	1
MATH-607	Graduate Seminar II	1
	Math Graduate Core Courses	6
	Open Electives	9
	General Education – Immersion 3	3
	General Education – Elective	3
	Program Elective	3
Fifth Year		
MATH-790	Research & Thesis	7
	MATH Graduate Electives	12
Total Semester Credit Hours		**146**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).

Computational Mathematics, BS degree/Applied and Computational Mathematics (project option), MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-141	Computer Science I (General Education – Elective)	4
CSCI-142	Computer Science II (General Education – Elective)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective‡	4
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
	Open Elective	3
Second Year		
CSCI-243	The Mechanics of Programming	3
CSCI-262	Introduction to Computer Science Theory	3
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-231	Differential Equations	3
MATH-251	Probability and Statistics I	3
MATH-399	Mathematical Sciences Job Search Seminar	0
Choose one of the following:		4
MATH-221	Multivariable and Vector Calculus (General Education – Elective)	
MATH-221H	Honors Multivariable and Vector Calculus (General Education – Elective)	
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Scientific Principles Perspective‡	4
Third Year		
MATH-431	Real Variables I	3
MATH-441	Abstract Algebra I	3
	Program Electives	12
	General Education – Social Perspective	3
	General Education – Immersion 1, 2	6
	General Education – Elective	3
Fourth Year		
MATH-421	Mathematical Modeling (WI-PR)	3
MATH-501	Experiential Learning Requirement in Mathematics	0
MATH-602	Numerical Analysis I	3
MATH-606	Graduate Seminar I	1
MATH-607	Graduate Seminar II	1
	Math Graduate Core Courses	6
	Open Electives	9
	General Education – Immersion 3	3
	General Education – Elective	3
	Program Elective	3
Fifth Year		
MATH-790	Research & Thesis	4
	MATH Graduate Electives	15
Total Semester Credit Hours		**146**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Students will satisfy this requirement by taking either University Physics I (PHYS-211) and University Physics II (PHYS-212) or General & Analytical Chemistry I and Lab (CHMG-141/145) and General & Analytical Chemistry II and Lab (CHMG-142/146) or General Biology I and Lab (BIOL-101/103) and General Biology II and Lab (BIOL-102/104).

Computational Mathematics, BS degree/Computer Science, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
CSCI-141	Computer Science I (General Education)	4
CSCI-142	Computer Science II (General Education)	4
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
MATH-199	Mathematics and Statistics Seminar	1
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Natural Science Inquiry Perspective	4
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
Second Year		
CSCI-243	The Mechanics of Programming	3
CSCI-262	Introduction to Computer Science Theory	3
MATH-200	Discrete Mathematics and Introduction to Proofs	3
MATH-221	Multivariable and Vector Calculus (General Education)	4
MATH-231	Differential Equations	3
MATH-251	Probability and Statistics I	3
MATH-399	Mathematical Sciences Job Search Seminar	0
Choose one of the following:		3
MATH-241	Linear Algebra	
MATH-241H	Honors Linear Algebra	
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Scientific Principles Perspective	4
Third Year		
MATH-411	Numerical Analysis	3
MATH-431	Real Variables I	3
	Program Electives	12
	General Education – Social Perspective	3
	General Education – Immersion 1	3
	General Education – Elective	3
	Open Elective	3
Fourth Year		
CSCI-664	Computational Complexity	3
CSCI-665	Foundations of Algorithms	3
MATH-421	Mathematical Modeling (WI-PR)	3
MATH-441	Abstract Algebra I	3
	Open Electives	9
	General Education – Immersion 2, 3	6
	General Education – Elective	3
Fifth Year		
CSCI-610	Fundamentals of Computer Graphics	3
CSCI-630	Foundations of Artificial Intelligence	3
CSCI-631	Foundations of Computer Vision	3
CSCI-635	Introduction to Machine Learning	3
CSCI-790	Computer Science MS Thesis	6
CSCI-799	Computer Science Graduate Independent Study	6
Total Semester Credit Hours		**146**

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are recommended.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, physics, math, and chemistry

Appropriate associate degree programs for transfer

AS degree in liberal arts with math/science option

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Environmental Science, BS

www.rit.edu/study/environmental-science-bs
L. Kate Wright, Professor
585-475-4669, lkwsbi@rit.edu

Program overview

Earning an environmental science degree from RIT gives you the problem-solving skills needed to be successful in the field. This major combines a love for nature with cutting edge research to create a sustainable future for our planet. Meaningful fieldwork gives you experience in solving real-world problems.

Environmental scientists solve problems relating to power generation, waste reduction and recycling, pollution control, land use, and land cover change, preserving biodiversity and ecological services, transportation, forestry, agriculture, economics, and a wide range of other areas. They study our relationship to nature and to each other, developing solutions that prevent or reverse environmental deterioration and work toward sustainability. Meeting these challenges requires problem-solving abilities based in science, mathematics, the social sciences, and other disciplines. This is an interdisciplinary degree with a strong foundation in biology, mathematics, chemistry, physics, and geographic information systems. The BS program provides you with the education and experiences you'll need to be successful.

Real-World Experience

Undergraduate research is strongly encouraged and strengthens your preparation for graduate study or employment. Students are encouraged to participate in undergraduate research experience under the guidance of faculty mentors. Students are also encouraged to apply for summer research internships both here at RIT and at other institutions. In addition to undergraduate research, optional cooperative education opportunities offer students a great way to get a head start on their career with paid, professional work experience with local, state, or federal government agencies, nonprofit environmental organizations, and a host of environmental consulting firms.

Nature of Work

Environmental scientists and geoscientists use their knowledge of the physical makeup and history of the Earth to protect the environment; locate water, mineral, and energy resources; predict future geologic hazards; and offer environmental site assessments and advice on indoor air quality, hazardous waste site remediation and construction and land-use projects. Most of their time is devoted to office or fieldwork and often includes data analysis and report/proposal writing.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

Co-op is optional for students in the environmental science degree.

Careers in Environmental Science

There is a great need for individuals who have both a strong background in environmental science and the ability to participate in an interdisciplinary problem-solving team. Upon graduation, students will be valued for their broad understanding of environmental science, their depth of knowledge in a particular aspect of environmental science, and their ability to attack and solve tough environmental problems.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Environmental Science, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems	3
BIOL-124	Introduction to Biology: Molecules and Cells	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells	1
ENVS-101	Concepts of Environmental Science	3
ENVS-102	Environmental Concepts Lab	1
ENVS-111	Soil Science	4
MATH-161	Applied Calculus (General Education- Mathematical Perspective A)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-240	General Ecology (WI-PR)	4
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	1
ENVS-250	Applications of Geographic Information Systems	4
ENVS-301	Environmental Science Field Skills	4
ENVS-499	Environmental Science Co-op (summer) *	0
STSO-220	Environment and Society	3
Choose one of the following:		3
STSO-421	Environmental Policy	
STSO-422	Great Lakes	
PUBL-210	Introduction to Qualitative Policy Analysis	
	General Education – Ethical Perspective	3
	Open Elective	3
Third Year		
BIOL-575	Conservation Biology	3
CHMO-231	Organic Chemistry I (General Education)	3
CHMO-235	Organic Chemistry Lab I (General Education)	1
ENVS-550	Hydrologic Applications of Geographic Information Systems	4
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
STAT-146	Introduction to Statistics II	4
	Concentration Courses	6
	General Education – Social Perspective	3
	General Education – Immersion 1	3
	Open Elective	3
Fourth Year		
ENVS-500	Experiential Learning Requirement in Environmental Science	0
ENVS-551	Environmental Science Capstone Seminar I	3
ENVS-552	Environmental Science Capstone Seminar II (WI-PR)	3
IMGS-431	Environmental Applications of Remote Sensing	3
	Concentration Courses	8
	Open Electives	6
	General Education – Immersion 2, 3	6
Total Semester Credit Hours		**123**

*Environmental Science Co-op for co-op track students only.
Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Concentrations

Cell and Molecular Biology

COURSE	
BIOL-206	Molecular Biology
BIOL-216	Molecular Biology Laboratory
BIOL-265	Evolutionary Biology
BIOL-302	Cell Biology
BIOL-305	Plants, Medicine and Technology
BIOL-311	Introduction to Microbiology
BIOL-315	Tissue Culture Laboratory
BIOL-321	Genetics
BIOL-322	Developmental Biology
BIOL-345	Molecular Ecology
BIOL-365	Introduction to Population Genetics
BIOL-403	Fundamentals of Plant Biochemistry and Pathology
BIOL-460	Infectious Disease: Impact on Society and Culture
BIOL-471	Environmental Microbiology

Chemistry

COURSE	
CHEM-201	Clean Energy: Hydrogen Fuel Cells
CHEM-203	Clean Energy: Hydrogen Fuel Cells Laboratory
CHEM-531	Climate Change: Science Technology & Policy
CHMA-261	Instrumental Analysis
CHMA-265	Instrumental Analysis Lab
CHMA-621	Advanced Instrument Analysis Lab
CHMB-460	Infectious Diseases: Impact Society & Culture
CHMI-351	Descriptive Inorganic Chemistry
CHMO-232	Organic Chemistry II
CHMO-236	Organic Chemistry Lab II
CHMP-441	Physical Chemistry I
ENVS-670	Advanced Concepts of Environmental Chemistry

Ecology and Field Biology

COURSE	
BIOL-205	Animal Behavior
BIOL-207	Galapagos: Ecology and Evolution
BIOL-211	Invertebrate Zoology
BIOL-212	Vertebrate Zoology
BIOL-218	Biology of Plants
BIOL-220	Biology of Fungi and Insects
BIOL-265	Evolutionary Biology
BIOL-309	Comparative Vertebrate Anatomy
BIOL-313	Comparative Animal Physiology
BIOL-343	Tropical Ecology
BIOL-371	Freshwater Ecology
BIOL-372	Biology without Walls
BIOL-385	Seneca Park Zoo Internship
BIOL-414	Animal Nutrition
BIOL-444	Ornithology
BIOL-455	Biogeography
BIOL-573	Marine Biology
ENVS-305	Urban Ecology
ENVS-311	Wetlands
ENVS-531	Climate Change: Science Technology & Policy
ENVS-540	Ecological Models in Geographic Information Systems
ENVS-640	Ecological Models in Geographic Information Systems

Economics

COURSE	
ECON-201	Principles of Macroeconomics
ECON-401	Intermediate Microeconomic Theory
ECON-403	Econometrics I
ECON-404	Mathematical Methods: Economics
ECON-406	Global Economic Issues
ECON-421	Natural Resource Economics
ECON-422	Benefit-Cost Analysis
ECON-440	Urban Economics
ECON-444	Public Finance
ECON-448	Development Economics
ECON-503	Econometrics II
ECON-520	Environmental Economics

Mathematics

COURSE	
MATH-221	Multivariable and Vector Calculus
MATH-231	Differential Equations
MATH-241	Linear Algebra
MATH-326	Boundary Value Problems
MATH-341	Advanced Linear Algebra
MATH-351	Graph Theory
MATH-381	Complex Variables

Organismal Biology and Evolution

COURSE	
BIOL-207	Galapagos: Ecology and Evolution
BIOL-211	Invertebrate Zoology
BIOL-212	Vertebrate Zoology
BIOL-218	Biology of Plants
BIOL-220	Biology of Fungi and Insects
BIOL-265	Evolutionary Biology
BIOL-309	Comparative Vertebrate Anatomy
BIOL-311	Introduction to Microbiology
BIOL-313	Comparative Animal Physiology
BIOL-322	Developmental Biology
BIOL-372	Biology Without Walls
BIOL-414	Animal Nutrition
BIOL-444	Ornithology
BIOL-573	Marine Biology
BIOL-673	Marine Biology
ENVS-311	Wetlands

Public Policy

COURSE	
PUBL-301	Public Policy Analysis
PUBL-302	Decision Analysis
PUBL-530	Energy Policy
PUBL-531	Climate Change: Science, Technology and Policy
STSO-201	Science and Technology Policy
STSO-326	History of Ecology and Environmentalism
STSO-330	Energy and the Environment
STSO-421	Environmental Policy
STSO-521	Biodiversity and Society

Remote Sensing and Digital Image Processing

COURSE	
IMGS-251	Radiometry
IMGS-261	Linear and Fourier Methods for Imaging
IMGS-361	Image Processing and Computer Vision I
IMGS-362	Image Processing & Computer Vision II
IMGS-371	Imaging Systems Analysis
IMGS-462	Multivariate Statistical Image Processing
IMGS-532	Advanced Environmental Applications of Remote Sensing

Statistics

COURSE	
BIOL-470	Statistical Analysis for Bioinformatics
STAT-305	Regression Analysis
STAT-325	Design of Experiments
STAT-335	Introduction to Time Series
STAT-345	Nonparametric Statistics
STAT-415	Statistical Sampling
STAT-425	Multivariate Analysis
STAT-521	Statistical Quality Control

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Environmental Science, BS/MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems	3
BIOL-124	Introduction to Biology: Molecules and Cells	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems	1
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells	1
ENVS-101	Concepts of Environmental Science (General Education – Elective)	3
ENVS-102	Concepts of Environmental Science Lab	1
ENVS-111	Soil Science (General Education – Elective)	4
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Global Perspective	3
	General Education – Artistic Perspective	3
	General Education – First-Year Writing (WI)	3
Second Year		
BIOL-240	General Ecology (WI-PR)	4
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	1
ENVS-250	Applications of Geographic Information Systems	4
ENVS-301	Environmental Science Field Skills	4
ENVS-499	Environmental Science Co-op (summer) *	0
STSO-220	Environment and Society (General Education – Elective)	3
Choose one of the following:		3
STSO-421	Environmental Policy (General Education – Elective)	
STSO-422	Great Lakes (General Education – Elective)	
PUBL-210	Introduction to Qualitative Policy Analysis (General Education – Elective)	
	General Education – Ethical Perspective	3
	Open Elective	3
Third Year		
BIOL-675	Advanced Conservation Biology	3
CHMO-231	Organic Chemistry I (General Education – Elective)	3
CHMO-235	Organic Chemistry I Lab (General Education – Elective)	1
ENVS-650	Hydrologic Applications of Geographic Information Systems	4
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
STAT-146	Introduction to Statistics II (General Education – Elective)	4
	General Education – Social Perspective	3
	Environmental Science Concentration Courses§	6
	General Education – Immersion 1	3
	Open Elective	3
Fourth Year		
ENVS-500	Experiential Learning Requirement in Environmental Science	0
ENVS-551	Environmental Science Capstone Seminar I	3
ENVS-552	Environmental Science Capstone Seminar II (WI-PR)	3
ENVS-601	Environmental Science Graduate Studies I	2
ENVS-602	Environmental Science Graduate Studies II	1
ENVS-795	Environmental Science Graduate Research	3
IMGS-431	Environmental Applications of Remote Sensing	3
	Environmental Science Concentration Courses§	6
	Open Electives	6
	General Education – Immersion 2, 3	6
Fifth Year		
	Graduate Professional Electives	6
	Graduate Public Policy/STSO Elective	3
	Graduate Statistics Elective	3
Choose one of the following:		6
ENVS-790	Environmental Science Thesis	
ENVS-780	Environmental Science Project	
Total Semester Credit Hours		**145**

*Environmental Science Co-op for co-op track students only.
Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
§ Please see advisor for course choices.

Environmental Science, BS degree/Science, Technology and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems	3
BIOL-124	Introduction to Biology: Molecules and Cells	3
BIOL-125	Introduction to Biology Lab: Organisms and Ecosystems	1
BIOL-126	Introduction to Biology Lab: Molecules and Cells	1
ENVS-101	Concepts of Environmental Science	3
ENVS-102	Concepts of Environmental Science Lab	1
ENVS-111	Soil Science	4
MATH-161	Applied Calculus (General Education – Mathematical Perspective A)	4
YOPS-010	RIT 365: RIT Connections	0
	General Education – First Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
Second Year		
BIOL-240	General Ecology (WI-PR)	4
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	1
ENVS-250	Applications of Geographic Information Systems	4
ENVS-301	Environmental Science Field Skills	4
STSO-220	Environment and Society	3
Choose one of the following:		3
STSO-421	Environmental Policy	
PUBL-210	Introduction to Qualitative Policy Analysis	
STSO-422	Great Lakes	
	General Education – Ethical Perspective	3
	Open Elective	3
Third Year		
BIOL-575	Conservation Biology	3
CHMO-231	Organic Chemistry I	3
CHMO-235	Organic Chemistry Lab I	1
Choose one of the following:		4
ENVS-540	Ecological Models in GIS	
ENVS-550	Hydrologic Applications of Geographic Information Systems	
PUBL-702	Graduate Decision Analysis	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
STAT-146	Introduction to Statistics II	4
	Environmental Science Track Course	4
	General Education – Social Perspective	3
	General Education - Immersion 1	3
	Open Elective	3
Fourth Year		
ENVS-551	Environmental Science Capstone Seminar I	3
ENVS-552	Environmental Science Capstone Seminar II (WI)	3
IMGS-431	Environmental Applications of Remote Sensing	3
PUBL-701	Graduate Policy Analysis	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	Environmental Science Track Course	4
	General Education – Immersion 2, 3	6
	Public Policy Elective	3
Fifth Year		
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
	Public Policy Electives	6
	Open Elective	3
Choose one of the following:		6
PUBL-785	Capstone Research Experience	
PUBL-790	Public Policy Thesis	
PUBL-798	Comprehensive Exam (plus 2 Graduate electives)	
Total Semester Credit Hours		**144**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is recommended.
- 2-3 years of science is required and must include biology and chemistry.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, and math

Appropriate associate degree programs for transfer

AS degree in biology, chemistry, environmental science, liberal arts with science option

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Imaging Science, BS

www.rit.edu/study/imaging-science-bs
James Ferwerda, Associate Professor
585-475-4923, James.Ferwerda@rit.edu

Program overview

Augmented and virtual reality. Drones. Satellite imaging. Artificial intelligence and computer vision. Advanced security systems. This is imaging science.

Imaging science is an extraordinary major that combines physics, math, computer science, and engineering to create fully functioning imaging systems, which are used in everything from scientific research and discovery, satellite imaging, filmmaking, search and rescue, national security, land surveying, AR/VR, and so much more.

What is an Imaging System?

Imaging systems answer fundamental scientific questions, monitor and protect our environment, help keep our nation secure, and aid medical researchers in their quest to conquer disease.

Imaging science is the study of the science, computing, and engineering theories behind the technology that goes into creating images, the integration of this technology into imaging systems, and the application of those systems to gather information and solve scientific problems. Imaging science is used to design and develop cutting-edge imaging systems, such as portable eye trackers, virtual reality devices, satellite systems, digital cameras, or anything that involves recording, processing, displaying, or analyzing image data. As the only university in the country with a bachelor of science in imaging sciences, RIT prepares you for a career in imaging science by immersing you in in-depth course work in imaging, optics, imaging processing, computer vision, imaging detectors, and more. You'll gain hands-on experience in cutting-edge labs and through course projects on day one, and build upon these experiences throughout your academic career.

Imaging Science Curriculum

The curriculum in the imaging science degree includes the study of:

- the physical observables associated with the subject of an image, such as reflected or emitted electromagnetic radiation;
- how those observables are captured by devices using optics and detectors such as satellites, digital cameras, medical imaging devices, and astronomical observatories;
- how the captured observables are processed using computers and specialized software;
- how processed signals are converted into images displayed on paper and electronic devices, and perceived by humans; and
- how image quality is assessed and scientific information is extracted.

The imaging science degree begins with Innovative Imaging Project, a year-long project-based class in which you'll learn about imaging science while designing and implementing a novel imaging system. As you progress in course work, both theoretical studies and practical applications of technologies are reinforced through hands-on laboratory experiments. The curriculum culminates with Imaging Science Senior Project I and II, a two-semester, two-course independent research project conducted by you under the guidance of faculty from the Chester F. Carlson Center for Imaging Science. You'll examine a problem in one of several imaging applications such as remote sensing, astronomy, computer vision, manuscript imaging and enhancement, optics, color science, image quality, or visual perception.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

In the imaging science degree, co-op is optional but strongly encouraged. Imaging science students gain career experience in a range of industries, including aviation, aerospace, environmental services, medical imaging, national research labs, and more. A sampling of companies that seek out RIT's imaging science students for co-ops and full-time employment include Adobe, Amazon, Apple, Boeing, Google, L3 Harris, Lockheed Martin, Microsoft, NASA, National Geospatial Intelligence Agency, Naval Undersea Warfare Center, Sandia National Labs, and more.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Imaging Science, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
IMGS-181	Freshman Imaging Project I	3
IMGS-182	Freshman Imaging Project II	3
IMGS-221	Vision & Psychophysics (General Education)	3
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-211	University Physics I (General Education – Natural Science Inquiry Perspective)	4
SOFA-103	Introduction to Imaging and Video Systems (General Education)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Artistic Perspective	3
	General Education – Elective	3
Second Year		
IMGS-180	Object-Oriented Scientific Computing	3
IMGS-211	Probability and Statistics for Imaging	3
IMGS-261	Linear and Fourier Methods for Imaging (General Education)	4
IMGS-351	Fundamentals of Color Science (General Education)	3
MATH-221	Multivariable and Vector Calculus (General Education)	4
PHYS-212	University Physics II (General Education – Scientific Principles Perspective)	4
PHYS-213	Modern Physics I (General Education)	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
IMGS-251	Radiometry	3
IMGS-321	Geometric Optics	3
IMGS-322	Physical Optics	3
IMGS-341	Interactions Between Light and Matter	3
IMGS-361	Image Processing and Computer Vision I	3
IMGS-362	Image Processing & Computer Vision II	3
	General Education – Social Perspective	3
	General Education – Immersion 1	3
	Open Electives	6
Fourth Year		
IMGS-442	Imaging Systems Analysis and Modeling	4
IMGS-451	Imaging Detectors	3
IMGS-502	Imaging Science Senior Project I (WI-PR)	3
IMGS-503	Imaging Science Senior Project II	3
	Program Elective	3
	General Education – Immersion 2, 3	6
	Open Electives	6
Total Semester Credit Hours		**121**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 2-3 years of science is required and must include chemistry or physics; both are recommended.

Transfer Admission

Transfer course recommendations without associate degree

Courses in math, computer science, liberal arts, and physics

Appropriate associate degree programs for transfer

AS degree in liberal arts with math/science option, computer science, engineering science, science

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Neuroscience, BS

www.rit.edu/study/neuroscience-bs

Elena Fedorovskaya, Research Professor
585-475-6952, eafppr@rit.edu

Program overview

If you are drawn to questioning how we think, how we learn, and how understanding the systems in our brains can help change the world, then it's time to consider RIT's neuroscience BS. Major advancements in the field are expected in the coming years, and this degree in neuroscience will put you at the forefront of innovation.

Neuroscience as a Major

Neuroscience is applied to a vast array of industries, including the rapidly developing field of artificial intelligence (AI). At the intersection of science, technology, and innovation, RIT is uniquely positioned to offer students a rich background in programming and computing as well as access to AI research projects to prepare for this booming field.

Study of the brain is also essential for understanding and combating neurodegenerative diseases like Alzheimer's and Parkinson's. Experts in neuroscience are at the forefront of treating mental illnesses and learning disabilities. With the combination of program electives and the opportunity to create your own track, you have the flexibility to design a neuroscience degree that will prepare you for admission to dental, medical, or optometry professional programs.

RIT's Degree in Neuroscience

RIT's flexible neuroscience BS involves the collaboration of the College of Science and the College of Liberal Arts to provide you with a multidisciplinary opportunity to study the brain while developing your background knowledge in the natural sciences, social sciences, and humanities. Graduates will be prepared for a multitude of professional careers and pre-professional programs.

Course of Study

Students may choose from three track options based on your course preferences and career goals: neurobiology, computational neuroscience, and behavioral neuroscience. In addition to tracks, program electives make it possible for a double major or twin minor to be completed by students who wish to do so. The track courses and program electives allow students to expand their knowledge in intersecting subfields of neuroscience such as biology, cognitive science, health science, psychology, and computing.

The lab requirements provide experience in the practical use of the equipment and methods used in the field of neuroscience today. This background gives graduates from this program a leg up when entering the workforce or continuing education.

Neuroscience Capstone

You will be required to participate in a two-semester Capstone in your final year of study to enhance your skills in technical communication and scientific research practices. You will research, write, and present a proposal for an independent research project.

Neuroscience BS Tracks

Neurobiology: Neurobiology track explores the branch of life sciences that deals with the anatomy, physiology, and pathology of the nervous system. Neurobiology centers around the study of nerve cells and the organization of these cells into functional circuits that process information and mediate behavior. Develop an in-depth understanding of how information is processed and stored in the brain and the molecular and cellular mechanisms underlying neural functioning.

Computational Neuroscience: Computational neuroscience track prepares students to use mathematical modeling and computer simulations together with the theories and experimentally gained knowledge of how the brain works to understand the principles that underlie perception, cognition, learning and other processes in the nervous system. Computational neuroscience addresses the relationship between neuroscience and artificial intelligence (AI). The development of artificial neural networks was inspired by studying brain function. AI researchers aim to emulate human intelligence by building models and developing biologically-inspired architectures that can make decisions and solve problems in the same way that humans do. Artificial intelligence is also increasingly used as a research tool in neuroscience to advance our understanding of how the human brain works. For example, by analyzing data on brain activity acquired using neuroimaging techniques, machine learning is used to uncover the patterns in brain activity and link them to specific cognitive and motor actions.

Behavioral Neuroscience: Behavioral neuroscience track focuses on the relationship between behavior and behavioral science such as psychology and neuroscience. Behavioral neuroscience examines what is happening in the brain and the behaviors, thoughts, and emotions that are associated with those processes. A range of topics are studied in this field including learning and memory, motivation, emotion, and sensory processes.

Careers in Neuroscience

A BS degree in neuroscience is versatile and students can apply their knowledge to a variety of industries. Graduates are well qualified for positions as research analysts, forensic science technicians, lab managers, neuroradiology technicians, pharmaceutical sales representatives, patient care assistants, science writers, neurotechnologists, data science specialists, and AI research associates. Those interested in advanced study can continue their education in graduate degree programs. Some typical job titles for those with advanced degrees include clinical psychologist, physician, speech-language pathologist, machine learning research scientist, occupational therapist, audiologist, AI systems engineer, public policy consultant, medical research scientist, MRI technician, lawyer, and neuroeconomist.

Premedical and Health Professions Advisory Program

Medical schools and graduate programs in the health professions (such as physician assistants, physical therapy, and occupational therapy) welcome applications from students majoring in a wide range of academic programs. Acceptance into these programs requires the completion of pre-med requirements such as course work in biological and physical sciences, a strong academic record, pertinent experiences in the field, and key intrapersonal and interpersonal capabilities. Learn more about how RIT's Premedical and Health Professions Advisory Program can help you become a competitive candidate for admission to graduate programs in the medical and health professions.

Pre-Vet Advising Program

Occupations in veterinary medicine are expected to grow three times faster than all other occupations between 2016 and 2026. If you're interested in caring for animals, conducting research related to animal illnesses, or working with livestock in university or government settings, the Pre-Vet Advising Program can help you reach your career goals. Learn more about RIT's personalized Pre-Vet Advising Program and how it can help you maximize your candidacy for admission to veterinary schools.

Pre-Law Advising Program

Law schools welcome applications from students majoring in a wide range of academic programs. If you are interested in pursuing law school, RIT's Pre-Law Advising Program is designed to maximize your chances of admission to law school. The program includes personalized advising, LSAT preparation, academic counseling, and a time table for law school admission.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-ops and internships take your knowledge and turn it into know-how. Science co-ops include a range of hands-on experiences, from co-ops and internships and work in labs to undergraduate research and clinical experience in health care settings. These opportunities provide the hands-on experience that enables you to apply your scientific, math, and health care knowledge in professional settings while you make valuable connections between classwork and real-world applications.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Neuroscience, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
BIOL-123	Introduction to Biology: Organisms and Ecosystems (General Education)	3
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems (General Education)	1
BIOL-124	Introduction to Biology: Molecules and Cells (General Education)	3
BIOL-126	Molecules and Cells (General Education)	1
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	3
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	1
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	3
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	1
MATH-161	Applied Calculus* (General Education – Mathematical Perspective A)	4
PSYC-101	Introduction to Psychology (General Education)	3
ISCH-110	Principles of Computing (General Education)	3
UWRT-150	Writing Seminar (General Education – First-Year Writing) (WI)	3
YOPS-10	RIT 365: RIT Connections	0
	General Education – Elective†	3
Second Year		
CGNS-222	Introduction to Cognitive Neuroscience	3
ISCH-370	Principles of Data Science	3
PHYS-111	College Physics I* (General Education)	4
PSYC-222	Biopsychology	3
PSYC-223	Cognitive Psychology	3
PSYC-255	Behavioral Science Research Methods	3
STAT-145	Introduction to Statistics I (General Education – Mathematical Perspective B)	3
	General Education – Artistic Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
CGNS-310	Experimental Lab Methods in Neuroscience	3
CGNS-451	Cognitive Neuroscience Seminar A	1
CGNS-452	Cognitive Neuroscience Seminar B	1
CHMO-231	Organic Chemistry I (General Education)	3
CHMO-235	Organic Chemistry I Lab (General Education)	1
	General Education – Ethical Perspective	3
	General Education – Immersion 1, 2	6
	Program Electives‡	12
Fourth Year		
CGNS-501	Neuroscience Capstone I	1
CGNS-502	Neuroscience Capstone II (WI-PR)	3
	Open Electives	12
	General Education – Immersion 3	3
	Program Electives‡	9
Total Semester Credit Hours		**121**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
* Students may take a higher course if applicable.
† For students interested in the Computational Neuroscience track, MATH-182 Calculus II is recommended for this General Education Elective.
‡ Students may choose to expand their knowledge in a specific area by selecting three program elective courses from one of the following tracks: Neurobiology, Computational Neuroscience, or Behavioral Neuroscience. They can select three courses as track courses from the table below. In some cases, with the permission of the program director and a recommendation from the academic advisor, students can define their own track that fits well with their interests and the program of study. If students choose to complete a track, 11-12 credit hours of additional program electives must be completed. If students choose not to complete a track, 21 credit hours of additional program electives must be completed. In addition to the list below, all track courses can be chosen as additional program electives.

Tracks

Neurobiology

CGNS-401	Neurobiology
CGNS-322	Animal Vision
CGNS-410	Imaging in Neuroscience
Students must both of the courses listed below:	
BIOL-305	Cell Biology
BIOL-315	Tissue Culture Laboratory

Computational Neuroscience

CGNS-421	Neuroscience and Artificial Intelligence
CGNS-410	Imaging in Neuroscience
LING-581	Natural Language Processing I
PSYC-432	Decision Making, Judgment, and Problem Solving

Behavioral Neuroscience

CGNS-410	Imaging in Neuroscience
PSYC-224	Perception
PSYC-410	Psychophysiology
PSYC-411	Psychopharmacology

Program Electives

BIOL-205	Animal Behavior
BIOL-206	Molecular Biology
BIOL-303	Cell Physiology
BIOL-309	Comparative Vertebrate Anatomy
BIOL-313	Comparative Animal Physiology
BIOL-314	Tissue Culture
BIOL-315	Tissue Culture Laboratory
BIOL-330	Bioinformatics
BIOL-428	Eukaryotic Gene Regulation and Disease
BIOL-470	Statistical Analysis for Bioinformatics
CHMB-402	Biochemistry I
CLRS-600	Fundamentals of Color Science
CSCI-331	Introduction to Artificial Intelligence
EEEE-547	Artificial Intelligence Explorations
ENGL-482	Speech Processing I
ENGL-582	Natural Language Processing II
ENGL-584	Speech Processing II
IMGS-221	Vision & Psychophysics
IMGS-351	Fundamentals of Color Science
IMGS-361	Image Processing & Computer Vision I
MEDS-250	Human Anatomy and Physiology I
MEDS-425	Introduction to Neuroscience
MEDS-525	Advanced Clinical Neuroanatomy
PHIL-404	Philosophy of Mind
PSYC-412	Biological Basis of Mental Disorders
PSYC-430	Memory and Attention
PSYC-431	Language and Thought
PSYC-450	Visual System & Psychophysics
PSYC-451	Color, Form & Object Perception
PSYC-452	Depth, Motion & Space Perception
PSYC-462	Cognitive and Perceptual Development

Admission requirements

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 3 years of mathematics is required and must include algebra, geometry, and algebra 2/trigonometry. Pre-calculus is recommended.
- 2-3 years of science is required and must include biology and chemistry.

Transfer Admission

Transfer course recommendations without associate degree

Courses in liberal arts, sciences, and math

Appropriate associate degree programs for transfer

AS degree in biology or liberal arts with biology option

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Physics, BS

www.rit.edu/study/physics-bs
Michael Kotlarchyk, Professor
585-475-6115, mnksps@rit.edu

Program overview

RIT's physics degree gives you a solid foundation in experimental, computational, and theoretical physics, as it fosters your analytical and problem-solving skills. The curriculum emphasizes laboratory training as you explore the basic principles governing the structure and behavior of matter, the generation and transfer of energy, and the interactions between energy and matter. The hands-on experience you gain prepares you for graduate school or for direct entry into a professional career.

Graduates with a BS degree in physics are sought after and highly employable in both the private and public sectors. They typically find positions in industry, government agencies and labs, and teaching. Many graduates choose to continue their education in doctoral or master's programs in physics or physics-related areas such as astrophysics, applied physics, biophysics, geophysics, atmospheric science, imaging science, and engineering. Students also are well-prepared for entry into medical, law, or business school.

The physics degree is a four-year program with optional topics ranging from condensed matter to cosmology. Students are required to complete a capstone research project undertaken in their final year. Students also participate in advanced laboratory work and have opportunities to participate in faculty-led research projects.

Course of Study

The curriculum begins with mathematics, science, and liberal arts courses covering the breadth of the discipline from condensed matter to cosmology. In the third or fourth years, advanced topics are introduced such as statistical physics and quantum mechanics. You'll also participate in advanced laboratory work and a capstone project.

Real World Experiences

Undergraduate research experiences are available with professors throughout the College of Science and are highly encouraged. These opportunities enable students to practice real-world lab application of the information they are studying. Cooperative Education is also highly recommended to gain experiences outside of RIT though not required for graduation.

Nature of Work

Some physicists use these principles in theoretical areas, such as the nature of time and the origin of the universe; others apply their physics knowledge to practical areas such as the development of advanced materials, electronic and optical devices, and medical equipment. They often design and perform science-based experiments, using sophisticated equipment, and then attempt to draw useful conclusions from their observations/analysis. (Source: U.S. Bureau of Labor Statistics Occupational Outlook Handbook)

Training/Qualifications

For jobs in basic research and development, a doctoral degree is usually required for physicists and astronomers. Those with bachelor's degrees can work as technicians or research assistants in industrial environments including scientific labs, engineering, software development, and non-technical fields. Many of those with doctorates in physics and astronomy ultimately teach in higher education. (Sources: U.S. Bureau of Labor Statistics O.O.H and American Institute of Physics Statistical Research Center)

Advantages

Graduates find employment opportunities with industrial, academic, and governmental agencies or continue their education in masters or doctoral programs in physics or physics-related areas such as astrophysics, biophysics, geophysics, atmospheric science, imaging science, and engineering. Students also may prepare for entry into medical, law, or business school.

Combined Accelerated Bachelor's/Master's Degrees

Today's careers require advanced degrees grounded in real-world experience. RIT's Combined Accelerated Bachelor's/Master's Degrees enable you to earn both a bachelor's and a master's degree in as little as five years of study, all while gaining the valuable hands-on experience that comes from co-ops, internships, research, study abroad, and more.

+1 MBA: Students who enroll in a qualifying undergraduate degree have the opportunity to add an MBA to their bachelor's degree after their first year of study, depending on their program. Learn how the +1 MBA can accelerate your learning and position you for success.

Experiential Learning

Cooperative Education

What's different about an RIT education? It's the career experience you gain by completing cooperative education and internships with top companies in every single industry. You'll earn more than a degree. You'll gain real-world career experience that sets you apart. It's exposure–early and often–to a variety of professional work environments, career paths, and industries.

Co-op is optional but strongly encouraged for students in the physics degree.

National Labs Career Events and Recruiting

The Office of Career Services and Cooperative Education offers National Labs and federally-funded Research Centers from all research areas and sponsoring agencies a variety of options to connect with and recruit students. Students connect with employer partners to gather information on their laboratories and explore co-op, internship, research, and full-time opportunities. These national labs focus on scientific discovery, clean energy development, national security, technology advancements, and more. Recruiting events include our university-wide Fall Career Fair, on-campus and virtual interviews, information sessions, 1:1 networking with lab representatives, and a National Labs Resume Book available to all labs.

Curriculum

Physics, BS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		4
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	
or		
BIOL-101	General Biology I (General Education – Natural Science Inquiry Perspective)	
BIOL-103	General Biology I Lab (General Education – Natural Science Inquiry Perspective)	
Choose one of the following:		4
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	
or		
BIOL-102	General Biology II (General Education – Scientific Principles Perspective)	
BIOL-104	General Biology II Lab (General Education – Scientific Principles Perspective)	
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-150	Introduction to Special Relativity	3
PHYS-216	University Physics I: Physics Majors (General Education)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
	General Education – Artistic Perspective	3
Second Year		
MATH-219	Multivariable Calculus (General Education)	3
MATH-231	Differential Equations (General Education)	3
PHYS-213	Modern Physics I (General Education)	3
PHYS-217	University Physics II: Physics Majors (General Education)	4
PHYS-222	Electronic Measurements	3
PHYS-225	Introduction to Computational Physics and Programming	3
PHYS-275	Sophomore Physics Seminar	1
PHYS-283	Vibrations and Waves	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
PHYS-214	Modern Physics II	3
PHYS-315	Experiments in Modern Physics	3
PHYS-316	Advanced Laboratory in Physics	3
PHYS-320	Mathematical Methods in Physics	3
PHYS-330	Classical Mechanics	4
PHYS-411	Electricity and Magnetism	4
PHYS-450	Capstone Preparation	1
	Program Elective†	3
	General Education – Immersion 1, 2	6
Fourth Year		
Choose one of the following:		3
PHYS-414	Quantum Mechanics	
PHYS-440	Thermal and Statistical Physics	
PHYS-451	Capstone Project I	3
PHYS-452	Capstone Project II (WI-PR)	3
	Program Electives†	6
	Open Electives	12
	General Education – Immersion 3	3
Total Semester Credit Hours		**124**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
† Students must complete one course from List A, one course from List B, and one course from List C.

Physics Electives

COURSE	
List A	
PHYS-360	Introduction to Chaotic Dynamics
PHYS-365	Physical Optics
PHYS-373	Observational Astronomy
PHYS-377	Advanced Computational Physics
PHYS-616	Data Analysis for the Physical Sciences
PHYS-667	Quantum Optics
IMGS-513	Multi-Wavelength Astronomical Imaging
IMGS-528	Design and Fabrication of Solid State Cameras
List B	
MCSE-713	Lasers
PHYS-321	Advanced Mathematical Methods in Physics
PHYS-352	Introduction to Biological Physics
PHYS-370	Stellar Astrophysics
PHYS-371	Galactic Astrophysics
PHYS-372	Extragalactic Astrophysics and Cosmology
PHYS-408	Laser Physics
PHYS-412	Advanced Electricity and Magnetism
PHYS-414	Quantum Mechanics
PHYS-415	Advanced Quantum Mechanics
PHYS-424	Nuclear Physics
PHYS-440	Thermal and Statistical Physics
PHYS-441	Advanced Thermal and Statistical Physics
PHYS-532	Solid State Physics
PHYS-670	Teaching and Learning Physics
List C	
	Any course from List A or List B

Combined Accelerated Bachelor's/Master's Degrees

The curriculum below outlines the typical course sequence(s) for combined accelerated degrees available with this bachelor's degree.

Physics, BS/MS degree (research option), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		4
CHMG-141	General Education – Natural Science Inquiry Perspective: General & Analytical Chemistry I	
CHMG-145	General Education – Natural Science Inquiry Perspective: General & Analytical Chemistry I Lab	
or		
BIOL-101	General Education – Natural Science Inquiry Perspective: General Biology I	
BIOL-103	General Education – Natural Science Inquiry Perspective: General Biology I Lab	
Choose one of the following:		4
CHMG-142	General Education – Scientific Principles Perspective: General & Analytical Chemistry II	
CHMG-146	General Education – Scientific Principles Perspective: General & Analytical Chemistry II Lab	
or		
BIOL-102	General Education – Scientific Principles Perspective: General Biology II	
BIOL-104	General Education – Scientific Principles Perspective: General Biology II Lab	
MATH-181	General Education – Mathematical Perspective A: Calculus I	4
MATH-182	General Education – Mathematical Perspective B: Calculus II	4
PHYS-150	Introduction to Special Relativity	3
PHYS-216	General Education – Elective: University Physics I: Physics Majors	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
	General Education – Artistic Perspective	3
Second Year		
MATH-219	General Education – Elective: Multivariable Calculus	3
PHYS-213	General Education – Elective: Modern Physics I	3
PHYS-217	General Education – Elective: University Physics II: Physics Majors	4
PHYS-222	Electronic Measurements	3
PHYS-225	Introduction to Computational Physics and Programming	3
MATH-231	General Education – Elective: Differential Equations	3
PHYS-275	Sophomore Physics Seminar	1
PHYS-283	Vibrations and Waves	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
PHYS-214	Modern Physics II	3
PHYS-315	Experiments in Modern Physics	3
PHYS-316	Advanced Laboratory in Physics	3
PHYS-320	Mathematical Methods in Physics	3
PHYS-330	Classical Mechanics	4
PHYS-411	Electricity and Magnetism	4
	Program Elective	3
	PHYS Lab/Computation Physics Elective	3
	General Education – Immersion 1, 2	6
Fourth Year		
Choose one of the following:		3
PHYS-414	Quantum Mechanics	
PHYS-440	Thermal and Statistical Physics	
Choose one of the following‡:		3
PHYS-610	Mathematical Methods for Physics	
PHYS-611	Classical Electrodynamics I	
PHYS-614	Quantum Theory	
Choose one of the following:		3
PHYS-630	Classical Mechanics	
PHYS-640	Statistical Physics	
Choose one of the following:		3
PHYS-790	Graduate Research & Thesis	
	Approved Graduate Physics Elective	
PHYS-601	Graduate Physics Seminar I	1
PHYS-602	Graduate Physics Seminar II	1
	Open Electives	9
	General Education – Immersion 3	3
Fifth Year		
Choose two of the following‡:		6
PHYS-610	Mathematical Methods for Physics	
PHYS-611	Classical Electrodynamics I	
PHYS-614	Quantum Theory	
PHYS-790	Graduate Research & Thesis	7
	Approved Graduate Physics Electives	6
Total Semester Credit Hours		**144**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ These are core courses for the MS degree. All three must be completed.

Physics, BS/MS degree (professional option), typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		4
CHMG-141	General Education – Natural Science Inquiry Perspective: General & Analytical Chemistry I	
CHMG-145	General Education – Natural Science Inquiry Perspective: General & Analytical Chemistry I Lab	
or		
BIOL-101	General Education – Natural Science Inquiry Perspective: General Biology I	
BIOL-103	General Education – Natural Science Inquiry Perspective: General Biology I Lab	
Choose one of the following:		4
CHMG-142	General Education – Scientific Principles Perspective: General & Analytical Chemistry II	
CHMG-146	General Education – Scientific Principles Perspective: General & Analytical Chemistry II Lab	
or		
BIOL-102	General Education – Scientific Principles Perspective: General Biology II	
BIOL-104	General Education – Scientific Principles Perspective: General Biology II Lab	
MATH-181	General Education – Mathematical Perspective A: Calculus I	4
MATH-182	General Education – Mathematical Perspective B: Calculus II	4
PHYS-150	Introduction to Special Relativity	3
PHYS-216	General Education – Elective: University Physics I: Physics Majors	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
	General Education – Artistic Perspective	3
Second Year		
MATH-219	General Education – Elective: Multivariable Calculus	3
PHYS-213	General Education – Elective: Modern Physics I	3
PHYS-217	General Education – Elective: University Physics II: Physics Majors	4
PHYS-222	Electronic Measurements	3
PHYS-225	Introduction to Computational Physics and Programming	3
MATH-231	General Education – Elective: Differential Equations	3
PHYS-275	Sophomore Physics Seminar	1
PHYS-283	Vibrations and Waves	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
PHYS-214	Modern Physics II	3
PHYS-315	Experiments in Modern Physics	3
PHYS-316	Advanced Laboratory in Physics	3
PHYS-320	Mathematical Methods in Physics	3
PHYS-330	Classical Mechanics	4
PHYS-411	Electricity and Magnetism	4
PHYS-450	Capstone Preparation	1
	General Education – Immersion 1, 2, 3	9
	Open Elective	3
Fourth Year		
Choose one of the following:		3
PHYS-414	Quantum Mechanics	
PHYS-440	Thermal and Statistical Physics	
Choose one of the following:		3
PHYS-610	Mathematical Methods for Physics	
PHYS-611	Classical Electrodynamics I	
PHYS-614	Quantum Theory	
Choose one of the following:		3
PHYS-630	Classical Mechanics	
PHYS-640	Statistical Physics	
PHYS-451	Capstone Project I	3
PHYS-452	Capstone Project II (WI-PR)	3
PHYS-601	Graduate Physics Seminar I	1
PHYS-602	Graduate Physics Seminar II	1
	Approved Graduate Physics Elective	3
	Open Electives	9
Fifth Year		
Choose one of the following:		3
PHYS-610	Mathematical Methods for Physics	
PHYS-611	Classical Electrodynamics I	
PHYS-614	Quantum Theory	
PHYS-780	Graduate Physics Project	4
	Approved Graduate Physics Electives	3
	Approved Graduate Professional Elective	9
Total Semester Credit Hours		**145**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

Physics, BS degree/Materials Science and Engineering, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following course sequences:		8
CHMG-141	General & Analytical Chemistry I§ (General Education – Natural Science Inquiry Perspective)	
CHMG-142	General & Analytical Chemistry II§ (General Education – Scientific Principles Perspective)	
CHMG-145	General & Analytical Chemistry I Lab§ (General Education – Natural Science Inquiry Perspective)	
CHMG-146	General & Analytical Chemistry II Lab§ (General Education – Scientific Principles Perspective)	
or		
BIOL-101	General Biology I (General Education – Natural Science Inquiry Perspective)	
BIOL-102	General Biology II (General Education – Scientific Principles Perspective)	
BIOL-103	General Biology I Lab§ (General Education – Natural Science Inquiry Perspective)	
BIOL-104	General Biology II Lab§ (General Education – Scientific Principles Perspective)	
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-150	Introduction to Special Relativity	3
PHYS-216	University Physics I: Physics Majors (General Education – Elective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
	General Education – Artistic Perspective	3
Second Year		
MATH-219	Multivariable Calculus (General Education – Elective)	3
MATH-231	Differential Equations (General Education – Elective)	3
PHYS-213	Modern Physics I (General Education – Elective)	3
PHYS-217	University Physics II: Physics Majors (General Education – Elective)	4
PHYS-222	Electronic Measurements	3
PHYS-225	Introduction to Computational Physics and Programming	3
PHYS-275	Sophomore Physics Seminar	1
PHYS-283	Vibrations and Waves	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
PHYS-214	Modern Physics II	3
PHYS-315	Experiments in Modern Physics	3
PHYS-316	Advanced Laboratory in Physics	3
PHYS-320	Mathematical Methods in Physics	3
PHYS-330	Classical Mechanics	4
PHYS-411	Electricity and Magnetism	4
	Physics Program Elective‡	3
	Open Elective	3
	General Education – Immersion 1, 2	6
Fourth Year		
MTSE-601	Materials Science	3
MTSE-705	Experimental Methods	3
Choose one of the following:		3
PHYS-414	Quantum Mechanics	
PHYS-440	Thermal and Statistical Physics	
	Physics Program Elective‡	3
	Materials Science Graduate Program Electives	6
	Open Electives	6
	General Education – Immersion 3	3
Fifth Year		
MTSE-704	Theoretical Methods in Materials Science and Engineering	3
MTSE-790	Research & Thesis	9
	Materials Science Graduate Program Electives	6
	Open Electives	4
Total Semester Credit Hours		**145**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Please see academic adviser for a list of physics electives.
§ Students will satisfy this requirement by taking a 4-credit hour lab science course. Students must take both the lecture and lab portions to satisfy the requirement. The lecture section alone will not fulfill the requirement.

Physics, BS degree/Science, Technology, and Public Policy, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		8
CHMG-141	General & Analytical Chemistry I§ (General Education – Natural Science Inquiry Perspective)	
CHMG-145	General & Analytical Chemistry I Lab§ (General Education – Natural Science Inquiry Perspective)	
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	
CHMG-146	General & Analytical Chemistry II Labs§ (General Education – Scientific Principles Perspective)	
or		
BIOL-101	General Biology I (General Education – Natural Science Inquiry Perspective)	
BIOL-102	General Biology II§ ((General Education – Scientific Principles Perspective)	
BIOL-103	General Biology I Lab§ (General Education – Natural Science Inquiry Perspective)	
BIOL-104	General Biology II Lab§ ((General Education – Scientific Principles Perspective)	
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-150	Introduction to Special Relativity	3
PHYS-216	University Physics I: Physics Majors (General Education – Elective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – Artistic Perspective	3
	General Education – Elective	3
	General Education – First-Year Writing (WI)	3
Second Year		
MATH-219	Multivariable Calculus (General Education – Elective)	3
MATH-231	Differential Equations (General Education – Elective)	3
PHYS-213	Modern Physics I (General Education – Elective)	3
PHYS-217	University Physics II: Physics Majors (General Education – Elective)	4
PHYS-222	Electronic Measurements	3
PHYS-225	Introduction to Computational Physics and Programming	3
PHYS-275	Sophomore Physics Seminar	1
PHYS-283	Vibrations and Waves	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
	General Education – Social Perspective	3
Third Year		
PHYS-214	Modern Physics II	3
PHYS-315	Experiments in Modern Physics	3
PHYS-316	Advanced Laboratory in Physics	3
PHYS-320	Mathematical Methods in Physics	3
PHYS-330	Classical Mechanics	4
PHYS-411	Electricity and Magnetism	4
PHYS-450	Capstone Preparation	1
	Physics Elective‡	3
	General Education – Immersion 1, 2	6
Fourth Year		
Choose one of the following:		
PHYS-414	Quantum Mechanics	3
PHYS-440	Thermal and Statistical Physics	3
PHYS-451	Capstone Project I	3
PHYS-452	Capstone Project II (WI-PR)	3
PUBL-701	Graduate Policy Analysis	3
PUBL-702	Graduate Decision Analysis	3
STSO-710	Graduate Science and Technology Policy Seminar	3
	Public Policy Graduate Elective	3
	Physics Elective‡	3
	Open Electives	6
Fifth Year		
PUBL-700	Readings in Public Policy	3
PUBL-703	Evaluation and Research Design	3
Choose one of the following:		6
PUBL-790	Public Policy Thesis	6
PUBL-785	Capstone Research	
PUBL-798	Comprehensive Exam plus 2 Graduate Electives	
	Physics Elective‡	3
	General Education – Immersion 3	3
	Graduate Electives	6
	Open Elective	3
Total Semester Credit Hours		**151**

Please see General Education Curriculum (GE) for more information.
(WI-PR) Refers to a writing intensive course within the major.
* Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Please see academic adviser for a list of physics electives.
§ Students will satisfy this requirement by taking a 4-credit hour lab science course. Students must take both the lecture and lab portions to satisfy the requirement. The lecture section alone will not fulfill the requirement.

Physics, BS degree/Astrophysical Sciences and Technology, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following:		8
CHMG-141	General & Analytical Chemistry I (General Education – Natural Science Inquiry Perspective)	
CHMG-142	General & Analytical Chemistry II (General Education – Scientific Principles Perspective)	
CHMG-145	General & Analytical Chemistry I Lab (General Education – Natural Science Inquiry Perspective)	
CHMG-146	General & Analytical Chemistry II Lab (General Education – Scientific Principles Perspective)	
or		
BIOL-101	General Biology I (General Education – Natural Science Inquiry Perspective)	
BIOL-102	General Biology II (General Education – Scientific Principles Perspective)	
BIOL-103	General Biology I Lab (General Education – Natural Science Inquiry Perspective)	
BIOL-104	General Biology II Lab (General Education – Scientific Principles Perspective)	
MATH-181	Calculus I (General Education – Mathematical Perspective A)	4
MATH-182	Calculus II (General Education – Mathematical Perspective B)	4
PHYS-150	Introduction to Special Relativity	3
PHYS-216	University Physics I: Physics Majors (General Education – Elective)	4
YOPS-10	RIT 365: RIT Connections	0
	General Education – First-Year Writing (WI)	3
	General Education – Elective	3
	General Education – Artistic Perspective	3
Second Year		
MATH-219	Multivariable Calculus (General Education – Elective)	3
MATH-231	Differential Equations (General Education – Elective)	3
PHYS-213	Modern Physics I (General Education – Elective)	3
PHYS-217	University Physics II: Physics Majors (General Education – Elective)	4
PHYS-220	University Astronomy	3
PHYS-222	Electronic Measurements	3
PHYS-225	Introduction to Computational Physics and Programming	3
PHYS-275	Sophomore Physics Seminar	1
PHYS-283	Vibrations and Waves	3
	General Education – Ethical Perspective	3
	General Education – Global Perspective	3
Third Year		
PHYS-214	Modern Physics II	3
PHYS-315	Experiments in Modern Physics	3
PHYS-316	Advanced Laboratory in Physics	3
PHYS-320	Mathematical Methods in Physics	3
PHYS-330	Classical Mechanics	4
PHYS-374	Introduction to Astrophysics	1
PHYS-411	Electricity and Magnetism	4
	PHYS Lab/Computational Physics Elective‡	3
	General Education – Social Perspective	3
	General Education – Immersion 1, 2	6
Fourth Year		
Choose one of the following:		3
PHYS-414	Quantum Mechanics	
PHYS-440	Thermal and Statistical Physics	
ASTP-601	Graduate Seminar I	1
ASTP-602	Graduate Seminar II	1
ASTP-608	Fundamental Astrophysics I	3
ASTP-609	Fundamental Astrophysics II	3
	General Education – Immersion 3	3
	Graduate Program Electives	6
	Open Electives	12
Fifth Year		
ASTP-790	Research & Thesis	10
	Graduate Program Elective	6
Total Semester Credit Hours		**145**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Please see academic advisor for a list of PHYS Lab/Computational Physics Electives.

Physics, BS degree/Sustainable Systems, MS degree, typical course sequence

COURSE		SEMESTER CREDIT HOURS
First Year		
Choose one of the following sequences:		8
CHMG-141	General & Analytical Chemistry I (General Education - Natural Science Inquiry Perspective)	
CHMG-145	General & Analytical Chemistry I Lab (General Education - Natural Science Inquiry Perspective)	
CHMG-142	General & Analytical Chemistry II (General Education - Scientific Principles Perspective)	
CHMG-146	General & Analytical Chemistry II Lab (General Education - Scientific Principles Perspective)	
or		
BIOL-101	General Biology I (General Education - Scientific Principles Perspective)	
BIOL-103	General Biology I Lab (General Education - Scientific Principles Perspective)	
BIOL-102	General Biology II (General Education - Scientific Principles Perspective)	
BIOL-104	General Biology II Lab (General Education - Scientific Principles Perspective)	
MATH-181	Calculus I (General Education - Mathematical Perspective A)	4
MATH-182	Calculus II (General Education - Mathematical Perspective B)	4
PHYS-150	Introduction to Special Relativity	3
PHYS-216	University Physics I: Physics Majors	4
	General Education - First Year Writing (WI)	3
	General Education - Artistic Perspective	3
	General Education - Elective	3
YOPS-010	RIT 365: RIT Connections	0
Second Year		
MATH-219	Multivariable Calculus	3
MATH-231	Differential Equations	3
PHYS-213	Modern Physics I	3
PHYS-217	University Physics II: Physics Majors	4
PHYS-222	Electronic Measurements	3
PHYS-225	Introduction to Computational Physics and Programming	3
PHYS-275	Sophomore Physics Seminar	1
PHYS-283	Vibrations and Waves	3
	General Education - Ethical Perspective	3
	General Education - Global Perspective	3
	General Education - Social Perspective	3
Third Year		
PHYS-214	Modern Physics II	3
PHYS-315	Experiments in Modern Physics	3
PHYS-316	Advanced Laboratory in Physics	3
PHYS-320	Mathematical Methods in Physics	3
PHYS-330	Classical Mechanics	4
PHYS-411	Electricity and Magnetism	4
PHYS-450	Capstone Preparation	1
	General Education - Immersion 1, 2,3	9
	Open Elective	3
Fourth Year		
Choose one of the following:		3
PHYS-414	Quantum Mechanics	
PHYS-440	Thermal and Statistical Physics	
Choose one of the following:		3
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose one of the following:		3
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy and Sustainability (or approved substitute)	
PHYS-451	Capstone Project I	3
PHYS-452	Capstone Project II (WI-PR)	3
	Program Electives	9
	Open Elective	3
Fifth Year		
Choose two of the following:		6
ISUS-702	Fundamentals of Sustainability Science	
ISUS-706	Economics of Sustainable Systems	
ISUS-806	Risk Analysis	
Choose two of the following:		6
ISUS-704	Industrial Ecology	
ISUS-808	Multicriteria Sustainable Systems	
PUBL-810	Technology, Policy and Sustainability (or approved substitute)	
Choose one of the following:		6
ISUS-780	Graduate Sustainability Capstone	
ISUS-790	Thesis	
	Approved Sustainability Electives	6
Total Semester Credit Hours		**148**

Please see General Education Curriculum (GE) for more information.
(WI) Refers to a writing intensive course within the major.
Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.
‡ Please see academic advisor for a list of PHYS Lab/Computational Physics Electives.

Admission requirements

This program is STEM designated when studying on campus and full time.

First-Year Admission

A strong performance in a college preparatory program is expected. This includes:

- 4 years of English
- 3 years of social studies and/or history
- 4 years of mathematics is required and must include algebra, geometry, algebra 2/trigonometry, and pre-calculus. Calculus is preferred.
- 3 years of science is required and must include physics.

Transfer Admission

Transfer course recommendations without associate degree

Courses in calculus or higher mathematics, college chemistry, calculus-based physics, and liberal arts

Appropriate associate degree programs for transfer

No common program available

Financial Aid and Scholarships

100% of all incoming first-year and transfer students receive aid.

RIT's personalized and comprehensive financial aid program includes scholarships, grants, loans, and campus employment programs. When all these are put to work, your actual cost may be much lower than the published estimated cost of attendance.

Science Exploration

www.rit.edu/study/science-exploration

Jeffrey Mills, Senior Lecturer
585-475-2445, jeffrey.mills@mail.rit.edu

Program overview

Do you know that you love science or math, and you know that you want a career in a related discipline but are not sure which area is your favorite, or how to choose a major that will get you to your career goals? You're not alone. Many prospective students love science and math, but may not have enough information to decide about a major before starting college. For example, do you know the differences between degrees in biotechnology and biochemistry or applied math and computational math? The science exploration option allows students to investigate the various majors in the College of Science and options for multidisciplinary science/math and careers before deciding on a program of study. Students who choose their major within the first year will not lose time toward the completion of their degree.

You will work as a member of a team on a laboratory-based project that requires you to apply many disciplines in the College of Science – and you will gain experience in all of those areas, helping you to find a career path that is right for you. Over two semesters, you will not only learn about the different majors available to you in the college, but you will also learn to work together to solve multidisciplinary problems as part of a team, how to manage a project from start to finish, and develop leadership skills. Together with your team, you will present your year's work at the annual Imagine RIT event in April.

Plan of study

The science exploration option is a yearlong sequence of courses built around a single project aimed at designing, building, and conducting multidisciplinary research to answer a question that is too complex for a single discipline to conquer. The question will be presented to you on the first day of class. This approach to multidisciplinary technical education emphasizes real-world, hands-on problem solving by student-led teams. It offers participating students a degree of autonomy and responsibility rarely found in first-year curricula.

As a result of this course sequence, students in the science exploration option develop an appreciation for specific fields that interest them, while simultaneously learning about other College of Science majors.

Curriculum

Science exploration option, typical course sequence

COURSE		SEMESTER CREDIT HOURS
INTS-151	Integrated Science I	3
INTS-152	Integrated Science II	3
INTS-155	Integrated Science II Lab	1
INTS-156	Integrated Science II Lab	1
YOPS-010	RIT 365: RIT Connections	0
	General Education - Mathematical Perspective A: Calculus Sequence	3
	General Education - Mathematical Perspective B: Calculus Sequence	3
	General Education - Natural Science Inquiry Perspective: Laboratory Sequence†	4
	General Education - Scientific Principles Perspective: Laboratory Sequence†	4
	General Education Curriculum*	3
UWRT-150	General Education - FYW: Writing Seminar	3
Total Semester Credit Hours		**28**

Please see Wellness Education Requirement for more information. Students completing bachelor's degrees are required to complete two different Wellness courses.

* Please see General Education Framework for more information.

† Students must choose one of the following laboratory sequences: General Biology I (BIOL-101), General Biology I Lab (BIOL-103), General Biology II (BIOL-102), and General Biology II Lab (BIOL-104); General and Analytical Chemistry I (CHMG-141), General and Analytical Chemistry I Lab (CHMG-145), General and Analytical Chemistry II (CHMG-142), and General and Analytical Chemistry II Lab (CHMG-146); or University Physics I (PHYS-121) and University Physics II (PHYS-122).

Faculty

Dean's Office

André O. Hudson, BS, Virginia Union University; Ph.D., Rutgers University—Dean; College of Science; Professor, Biology: amino acid metabolism, bacterial cell wall metabolism, plant-bacterial interactions

Larry Buckley, BA, University of Missouri at St. Louis; MS, Southern Illinois University at Edwardsville; Ph. ., Southern Illinois University at Carbondale—Senior Associate Dean for Academic Affairs; Associate Professor

Casey Miller, BA, Wittenberg University; Ph.D., University of Texas at Austin—Senior Associate Dean for Research and Faculty Affairs; Professor

Catherine Mahrt-Washington, BS, Niagara University; MS, Rochester Institute of Technology; Ph.D., Andrews University—Senior Dean; Director of Student Advising; College of Science Honors Advocate

Integrated Sciences Academy

Michael Murdoch, BS, Cornell University; MS, Rochester Institute of Technology, Ph.D., Eindhoven University of Technology (The Netherlands)— Head, Integrated Sciences Academy; Director, Munsell Color Science Laboratory; Associate Professor, Program of Color Science

Mekides Assefa Abebe, BS, Mekelle University (Ethiopia); MS, Jean Monnet University (France); Ph.D., University of Poitiers (France)—Richard S. Hunter Professor; Visiting Assistant Professor, Program of Color Science

Mark D. Fairchild, BS, MS, Rochester Institute of Technology; MA, Ph.D., University of Rochester—Professor, Program of Color Science

Susan Farnand, BS, Cornell University; MS, Ph.D., Rochester Institute of Technology—Graduate Program Director, Color Science; Associate Professor, Program of Color Science

Elena Fedorovskaya, MS, Ph.D., Lomonosov Moscow State University (Russia)—Research Professor, Program of Color Science

Jeffrey L. Mills, BS, Juniata College; Ph.D., University at Buffalo—Associate Head, School of Chemistry and Materials Science; Director, Science Exploration; Senior Lecturer

Christopher Thorstenson, BS, Florida State University; MA, Appalachian State University; MS, Rochester Institute of Technology, Ph.D., University of Rochester—Assistant Professor, Program of Color Science

Thomas H. Gosnell School of Life Sciences

Leslie Kate Wright, BS, Rochester Institute of Technology; MS, Ph.D., University of Rochester—Head, Thomas H . Gosnell School of Life Sciences; Professor

Gregory A. Babbitt, BA, Ohio Wesleyan University; MS, Ph.D., University of Florida—Associate Professor

Elle M. Barnes, BA, New York University; Ph.D., Fordham University—Assistant Professor

Eli Borrego, BS, Ph.D., Texas A&M University—Assistant Professor

Larry Buckley, BA, University of Missouri at St. Louis; MS, Southern Illinois University at Edwardsville; Ph.D., Southern Illinois University at Carbondale—Senior Associate Dean for Academic Affairs; Associate Professor

Dawn Carter, BSc, Botany University of Manchester (United Kingdom); Ph.D., University of Nottingham (United Kingdom)—Principle Lecturer

Sandra Connelly, BS, Juniata College; MS, University at Buffalo; Ph.D., Miami University of Ohio—Principal Lecturer

Mary-Anne Courtney, BA, Miami University; Ph.D., University of Louisville; Postdoctoral Fellowship, University of Rochester—Lecturer

Feng Cui, MD, Hunan Medical University (China); MS, Truman State University; Ph.D., Iowa State University—Graduate Program Director, Bioinformatics; Associate Professor

Elizabeth DiCesare, BA, Colgate University; Ph.D., Lehigh University—Principal Lecturer

Maureen C. Ferran, BS, Fordham University; MS, Ph.D., University of Connecticut—Professor

Elizabeth N. Hane, BA, Rice University; MA, University of Kansas; Ph.D., Brown University—Professor

André O. Hudson, BS, Virginia Union University; Ph.D., Rutgers University—Dean, College of Science; Professor

Karl F. Korfmacher, BA, Carleton College; MEM, Ph.D., Duke University—Professor

Premlata Kumar, BS, MS, University of Bombay (India); Ph.D., University of Western Australia (Australia)—Lecturer

Carmody K. McCalley, BA, Middlebury College; Ph.D., Cornell University—Graduate Program Director, Environmental Science; Associate Professor

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Michael V. Osier, BS, University of Vermont; Ph.D., Yale University—Associate Professor

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Michael A. Savka, BS, West Virginia University; MS, Ph.D., University of Illinois at Urbana-Champaign—Professor

Stefan Schulze, B.Sc., University of Potsdam (Germany); M.Sc., Ph.D., University of Münster (Germany)—Assistant Professor

Paul A. Shipman, BS, MS, Emporia State University; Ph.D., Oklahoma State University—Associate Professor

Gary R. Skuse, BA, University of Rochester; Ph.D., Syracuse University—Professor

Susan Smith Pagano, BS, State University College at Oswego; MS, State University College at Brockport; Ph.D., University of Rhode Island—Associate Professor

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Hyla C. Sweet, BS, Union College; Ph.D., University of Texas at Austin—Associate Professor

Julie A. Thomas, B.App.Sc ., Ph.D., LaTrobe University, Bendingo (Australia)—Associate Professor

Anna Christina Tyler, BS, Cornell University; MS, Ph.D., University of Virginia—Professor

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School of Mathematics and Statistics

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Jeffrey L. Mills, BS, Juniata College; Ph.D., University at Buffalo—Associate Head, School of Chemistry and Materials Science; Director, Science Exploration; Senior Lecturer

Massoud J. Miri, BS, MS, Ph.D., University of Hamburg (Germany)—Associate Professor

Suzanne F. O'Handley, BS, Rutgers University; MS, Ph.D., University of Rochester—Associate Professor

Hans Schmitthenner, BS, Massachusetts Institute of Technology; Ph.D., Pennsylvania State University—Research Professor

Gerald A. Takacs, BS, University of Alberta (Canada); Ph.D., University of Wisconsin—Professor

Douglas Tusch, BS, Rochester Institute of Technology; MS, Ph.D., University of Rochester—Lecturer

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School of Physics and Astronomy

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Mishkat Bhattacharya, BTech, Indian Institute of Technology (India); MA, Ph.D., University of Rochester—Professor

Michelle D. Chabot, BA, Rice University; MA, Ph.D., University of Texas at Austin—Senior Lecturer

Moumita Das, BS, MS, Jadavpur University (India); Ph.D., Indian Institute of Science (India)—Professor

Krsna Dev, MS, Peoples' Friendship University (Russia); MS, McMaster University (Canada); Ph.D., Dartmouth College—Lecturer

Pratik P. Dholabhai, BS, MS, Maharaja Sayajirao University of Baroda (India); MS, Ph.D., University of Texas at Arlington—Associate Professor

Kristina M. Driscoll, BA, MS, Ph.D., Boston University—Senior Lecturer

Andrew Ferrante, BS, Duke University; MS, Ph.D., University of Illinois at Urbana-Champaign—Lecturer

Scott V. Franklin, BA, University of Chicago; Ph.D., University of Texas—Director, Center for Advancing STEM Teaching, Learning and Evaluation, Professor

Tamah Y. Fridman, MS, Moscow Physics and Technology Institute (Russia); Ph.D., Rutgers University—Visiting Lecturer

Edwin Hach III, BS, MS, St. Bonaventure University; Ph.D., University of Arkansas—Associate Professor

Dawn Hollenbeck, BS, University of California at Davis; MS, Ph.D., University of Texas at Dallas—Associate Head, School of Physics and Astronomy; Associate Professor

Gregory A. Howland, BA, Oberlin College; MA, Ph.D., University of Rochester—Assistant Professor

Seth M. Hubbard, BS, Drexel University; MS, Case Western Reserve University; Ph.D., University of Michigan—Graduate Program Director, Physics; Professor

Jeyhan Kartaltepe, BA, Colgate University; MS, Ph.D., University of Hawaii—Associate Professor

Michael T. Lam, BA, Colgate University; MS, Ph.D., Cornell University—Research Assistant Professor

Nicola Lanatà, B.Sc. Università degli studi di Pisa, (Italy); M.Sc. Università di Pisa, (Italy); Ph.D., International School for Advanced Studies (Italy)—Assistant Professor

Charles P. Lusignan, BS, State University of New York at Binghamton; MA, Ph.D., University of Rochester—Senior Lecturer

Amir Maharjan, B.Sc., Tri-chandra College (Nepal); M.Sc., Tribhuvan University (Nepal); MS, Ph.D., University of Cincinnati—Senior Lecturer

Aaron M. McGowan, BS, Cornell University; Ph.D., University of Minnesota—Principal Lecturer

Lishibanya Mohapatra, BS, St. Stephen's College (India); MS, Indian Institute of Technology (India); Ph.D., Brandeis University—Assistant Professor

Vivek Narayanan, M.Sc., Indian Institute of Technology (India); MA, Ph.D., University of Texas—Senior Lecturer

Shima Parsa Moghaddam, B.Sc., Iran University of Science and Technology (Iran); M.Sc., Tabriz University (Iran); Ph.D., Wesleyan University—Assistant Professor

Michael S. Pierce, BS, Rensselaer Polytechnic Institute; MS, Ph.D., University of Washington—Associate Professor

Ryne Raffaelle, BS, MS, Southern Illinois University; Ph.D., University of Missouri-Rolla—Vice President for Research and Associate Provost, Professor

Michael W. Richmond, BA, Princeton University; MA, Ph.D., University of California at Berkeley—Director, RIT Observatory; Professor

Andrew Robinson, BS, Ph.D., University of Manchester (United Kingdom)—Graduate Program Director, Astrophysical Sciences and Technology; Professor

Hridaya Shah, BEng, Ganpat University (India); MS, Ph.D., University of Massachusetts at Lowell—Lecturer

Joel D. Shore, BS, Haverford College; Ph.D., Cornell University—Senior Lecturer

George M. Thurston, AB, Oberlin College; Ph.D., Massachusetts Institute of Technology—Graduate Program Director, Physics; Professor

Greg Trayling, B.Sc., Simon Fraser University (Canada); M.Sc., University of Victoria (Canada); Ph.D., University of Windsor (Canada)—Senior Lecturer

Hsiuling Wong, BS, MS, National Taiwan University (Taiwan); Ph.D., University of Missouri, Kansas City—Lecturer

Ke Xu, BE, Zhejiang University (China); MS, Ph.D., University of Illinois at Chicago—Assistant Professor

Aditya Yechan Gunja, B.Sc., St. Stephens College (India); MS, Ph.D., Wayne State University—Lecturer

Andronique I. Zacharakis, B.Sc., M.Sc., Concordia University (Canada); Ph.D., University of Quebec (Canada)—Lecturer

Michael B. Zemcov, B.Sc., University of British Columbia (Canada); Ph.D., Cardiff University (United Kingdom)—Associate Professor

Benjamin M. Zwickl, BS, Purdue University; MS, Ph.D., Yale University—Associate Professor

Chester F. Carlson Center for Imaging Science

Susan Houde-Walter, BA, Sarah Lawrence College; MS, Ph.D., University of Rochester—Director, Carlson Center for Imaging Science; Professor

Charles Bachmann, AB, Princeton University; Sc.M., Ph.D., Brown University—Professor

Dimah Dera, BS, Damascus University (Syria); MA, MS, Ph.D., Rowan University—Assistant Professor

Gabriel J. Diaz, BFA, Skidmore College; MS, Ph.D., Rensselaer Polytechnic Institute—Associate Professor

Roger L. Easton Jr., BS, Haverford College; MS, University of Maryland; Ph.D., University of Arizona—Professor

James A. Ferwerda, BA, MS, Ph.D., Cornell University—Associate Professor

Michael Gartley, BS, Binghamton University; MS, Ph.D., Rochester Institute of Technology—Assistant Research Professor

Aaron Gerace, BS, MS, State University College at Brockport; Ph.D., Rochester Institute of Technology—Research Faculty

Richard Hailstone, BS, Northern Illinois University; MS, Indiana University—Associate Professor

Joseph Hornak, BS, Utica College of Syracuse University; MS, Purdue University; Ph.D., University of Notre Dame—Professor

Emmett Ientilucci, BS, MS, Ph.D., Rochester Institute of Technology—Associate Professor

Joel H. Kastner, BS, University of Maryland; MS, Ph.D., University of California, Los Angeles—Professor

John P. Kerekes, BS, MS, Ph.D., Purdue University—Research Professor

Bartosz Krawczyk, B.Sc., M.Sc., Ph.D., Wroclaw University of Science and Technology (Poland)—Assistant Professor

Robert Kremens, BS, The Cooper Union; MS, University of Rochester; MS, Ph.D., New York University—Research Professor

David W. Messinger, BS, Clarkson University; Ph.D., Rensselaer Polytechnic Institute—Professor

Zoran Ninkov, BS, University of Western Australia (Australia); M.Sc., Monash University (Australia); Ph.D., University of British Columbia (Canada)—Professor

Jeff Pelz, BFA, MS, Rochester Institute of Technology; Ph.D., University of Rochester—Professor

Jie Qiao, BS, University of Science and Technology Liaoning (China); MS, Tsinghua University (China); MBA, University of Rochester; Ph.D., University of Texas at Austin—Associate Professor

Carl Salvaggio, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York College of Environmental Science and Forestry—Professor

Grover Swartzlander, BS, Drexel University; MS, Purdue University; Ph.D., Johns Hopkins University—Professor

Jan van Aardt, BSc, University of Stellenbosch (South Africa); MS, Ph.D., Virginia Polytechnic Institute and State University—Professor

Anthony Vodacek, BS, University of Wisconsin; MS, Ph.D., Cornell University—Professor

Distinguished Professorships

Richard S. Hunter Professorship in Color Science, Appearance, and Technology

Established: 1983

Donors: Mr. and Mrs. Richard S. Hunter

Purpose: To enable RIT to increase its research and educational efforts in the areas of color science, technology, and appearance science in order to benefit the industry and science of color.

Held by: Mekides Assefa Abebe

Frederick and Anna B. Wiedman Professorship

Established: 1985

Donor: Frederick Wiedman Jr.

Purpose: To support a truly outstanding scholar and/or teacher in imaging science

Held by: Charles Bachmann

Frederick Wiedman Jr. Professorship

Established: 1997

Donor: Frederick Wiedman, Jr.

Purpose: To support a second truly outstanding scholar and/or teacher in imaging science.

Held by: Jeff Pelz

Xerox Professorship in Imaging Science

Established: 1996

Donor: Xerox Corporation

Purpose: Established to expand and enhance the research and teaching activities within the Chester F. Carlson Center for Imaging Science.

Held by: David Messinger

Minors

www.rit.edu/study/immersions-and-minors

Students pursuing a bachelor's degree have the option of completing a minor, which can complement a student's major, help them develop another area of professional expertise, or enable them to pursue an area of personal interest. Completion of a minor is formally designated on the baccalaureate transcript, which serves to highlight this accomplishment to employers and graduate schools. For the most recent list of minors, please visit rit.edu/minors.

Please note: A minor is a related set of academic courses consisting of no fewer than 15 credit hours. The following parameters must be met in order to earn a minor:

- At least nine credit hours of the minor must consist of courses not required by the student's home major.
- Students may pursue multiple minors. A minimum of nine credit hours must be designated toward each minor; these courses may not be counted toward other minors.
- The residency requirement for a minor is a minimum of nine credit hours consisting of RIT courses (excluding "X" graded courses).

Not all minors are approved to fulfill general education requirements. Please check with an adviser in regard to minors approved to fulfill these requirements.

2D Studio Arts

Nate Rohman, Minor Advisor
585-475-5760, nmrpgd@rit.edu

Program overview

The 2D studio arts minor allows students to develop and refine the practices inherent in the production of two-dimensional fine art forms, including drawing, painting, printmaking, and photography. Students develop conceptual, analytical, and technical skills in these media while learning to connect inspiration and ideation to creative visual expression in two dimensions. Once the two required introductory courses are completed, students may use elective courses to explore diverse two-dimensional media, such as painting, printmaking, and photography, or they may choose to work more intensively within one medium.

Notes about this minor:

- This minor is closed to students majoring in the studio arts BFA who have chosen options in painting or printmaking.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
Choose one of the following:*	
FDTN-111	Drawing I
ITDI-211	Drawing for Non-Majors
Choose one of the following:	
FDTN-112	Drawing II
FDTN-212	Drawing II Workshop: Topics
Electives†	
Choose three of the following:	
PAIT-201	Introduction to Painting
PAIT-233	Painting for Non-Majors
PAIT-460	Watercolor
PAIT-501	Painting
PAIT-571	Painting the Figure
PHAR-150	Introduction to Film Photography
PHAR-160	Intro to Digital Photography
PRNT-201	Introduction to Printmaking
PRNT-501	Printmaking
STAR-305	Figure Drawing
STAR-405	Fine Art Drawing
STAR-563	Contemporary Drawing

* Students who are NOT enrolled in BFA programs are required to complete Drawing for Non-Majors (ITDI-211) instead of Drawing I (FDTN-111).
† At least two courses must be taken at the 300-level or higher.

3D Studio Arts

Nate Rohman, Minor Advisor
585-475-5760, nmrpgd@rit.edu

Program overview

In the 3D studio arts minor students develop and refine the practices required for the production of three-dimensional art in various media. Students develop conceptual, spatial, analytical, and technical skills while working through the process of art making from ideation to the production of creative visual expression in three dimensions.

Notes about this minor:

- This minor is closed to students majoring in the studio arts BFA who have chosen options in ceramics, expanded forms, glass, furniture design, metals and jewelry design, or sculpture.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
FDTN-131	3D Design I
Choose one of the following:*	
FDTN-132	3D Design II
FDTN-232	3D Design II Workshop: Topic
SCUL-269	Sculpture for Non-Majors
Electives	
Choose three of the following:	
SCUL-201	Introduction to Sculpture
SCUL-501	Sculpture
SCUL-511	Expanded Forms
SCUL-543	Foundry Practices
SCUL-573	Figure Sculpture
SCUL-583	Welding and Fabrication

* Students who are NOT enrolled in BFA programs are required to complete Sculpture for Non-Majors (SCUL-269) in place of 3D Design II (FDTN-132) or 3D Design II Workshop: Topic (FDTN-232).

Accounting

Matthew Cornwell, Minor Advisor
585-475-6916, mcornwell@saunders.rit.edu

Program overview

Accounting is necessary in a wide variety of careers. Students completing an accounting minor will broaden their learning experiences and professional opportunities by gaining more depth in operational accounting topics.

Notes about this minor:

- This minor is closed to students majoring in accounting.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
ACCT-110	Financial Accounting
ACCT-210	Management Accounting
Electives†	
Choose three of the following:	
ACCT-360	Intermediate Financial Accounting I*
ACCT-365	Intermediate Financial Accounting II*
ACCT-420	Personal and Small Business Taxation*
ACCT-430	Cost Accounting
ACCT-445	Accounting Information Systems
ACCT-450	Accounting for Government and Not-for-profit Organizations
ACCT-489	Seminar in Accounting
ACCT-490	Auditing
ACCT-560	Forensic Accounting and Fraud Examination
BLEG-200	Business Law I
BLEG-250	Law, Business, and Society
FINC-220	Financial Management

* These courses are recommended for students interested in pursuing CPA certification.
† At least two electives must be accounting (ACCT) courses.

Actuarial Science

James Marengo, Minor Advisor
585-475-6872, jemsma@rit.edu

Program overview

The actuarial science minor prepares students for work in insurance companies, investment firms, banks, for the government, and in the health care industry where there is a need to analyze the financial consequences of risk. The actuarial science minor prepares students for two exams administered by the Society of Actuaries. Those exams are Exam P: Probability, which assesses a candidate's knowledge of the fundamental probability tools for quantitatively assessing risk, and Exam FM: Financial Mathematics, which assesses a candidate's understanding of the fundamental concepts of financial mathematics and how those concepts are applied in a variety of areas.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Choose one of the following:	
MATH-181	Calculus I
MATH-171/172	Calculus A/Calculus B
Choose one of the following:	
MATH-182	Calculus II
MATH-173	Calculus C
Choose one of the following:	
MATH-219	Multivariable Calculus
MATH-221	Multivariable and Vector Calculus
MATH-251	Probability and Statistics I
STAT-257	Statistical Inference
Required Courses (Group I)	
MATH-255	Actuarial Mathematics
MATH-261	Topics in Math Finance
Group II	
Choose at least one of the following:	
ACCT-110	Financial Accounting
FINC-220	Financial Management
ECON-403	Econometrics I
Group III†	
STAT-305	Regression Analysis
STAT-335	Introduction to Time Series
STAT-405	Mathematical Statistics I
STAT-406	Mathematical Statistics II
STAT-547	Data Mining
MATH-505	Stochastic Processes

* At least two courses must be taken at the 300-level or higher.
† Students must complete two courses from Group III. Students may elect to complete additional course from Group II to satisfy this requirement.

Advertising and Public Relations

Kari Cameron, Minor Advisor
585-475-4619, klcgpt@rit.edu

Program overview

The advertising and public relations minor prepares students to analyze audiences, write advertising copy, prepare press releases, select media, and manage broad-scaled persuasive campaigns. Students are grounded in the basic theories of persuasive communication enabling them to create persuasive messages with a strong emphasis on ethical decision-making.

Notes about this minor:

- This minor is closed to students majoring in advertising and public relations.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
Choose one of the following:	
COMM-211	Principles of Advertising
COMM-212	Public Relations
Electives	
*Choose four of the following:**	
COMM-202	Mass Communications
COMM-211	Principles of Advertising
COMM-212	Public Relations
COMM-221	Public Relations Writing
COMM-223	Digital Design in Communication
COMM-303	Small Group Communication
COMM-305	Persuasion
COMM-321	Copywriting and Visualization
COMM-322	Campaign Management and Planning†
COMM-341	Visual Communication
COMM-346	Global Media
COMM-356	Critical Practice in Social Media
COMM-489	Topics in Communication
COMM-489	Special Topics in Communication

* At least one course must be taken at the 300 level or higher.
† This course has two pre-requisites: Principles of Advertising (COMM-211) and Public Relations (COMM-212).

American Arts

Program overview

This minor provides students with an opportunity to study the American arts in a variety of disciplines, including painting, architecture, film, photography, music, theatre, and the mass media. Courses present American art within the context of the broader current of American life, including its history, philosophy, social, and cultural traditions.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Electives	
*Choose five courses from the following:**	
Visual Culture	
FNRT-370	American Painting†
FNRT-372	American Film of the Studio Era
VISL-206	Queer Looks
VISL-373	American Film Since the Sixties
VISL-377	Imag(in)ing Rochester
VISL-383	Traumatic Images
VISL-384	Art of Dying
Performing Arts	
FNRT-203	American Popular & Rock Music
FNRT-322	Survey of Jazz
PRFL-327	American Musical Theater
Literature	
ENGL-312	American Literature
ENGL-411	Themes in American Literature
ENGL-413	African-American Literature

* Students must take at least one course in each of the three disciplines (Visual Culture, Performing Arts, and Literature).
† This course is offered on RIT's international campuses.

American Indian and Indigenous Studies

Program overview

The American Indian and Indigenous studies minor enhances students' knowledge of the life-worlds of American Indians and Indigenous peoples in the Americas. Building on diverse perspectives and scholarly resources, the course work in the minor will broaden students' understanding of the political experiences, collective memories, ethnohistories, sociocultural traditions, and the contributions of Indigenous peoples to communities and nations. Courses explore a diverse range of topics, including sovereignty, language revitalization, identity, representation, and activism.

Notes about this minor:

- This minor is closed to students majoring in international and global studies who have chosen the Indigenous studies track.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
ANTH-260	Native North Americans
Electives	
Choose two of the following:	
ANTH-255	Regional Archaeology Topic ID #1 or #3
ANTH-265	Native Americans in Film
ANTH-335	Culture and Politics in Latin America
ANTH-375	Native American Cultural Resources and Rights
ANTH-489	Topics in Anthropology§
SOCI-489	Topics in Sociology§
Choose two of the following:	
ANTH-210	Culture and Globalization
ANTH-312	People Before Cities
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-430	Visual Anthropology
SOCI-361	Sociology of Numbers
SOCI-395	Borders: Humans, Boundaries, and Empires

* Course may be used when topic focuses on Mesoamerica or North America.
§ Course may be used when topic is relevant to minor.

American Politics

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

Study the basic principles and institutions of the American political order and their implications for current political practice. The strengths and limitations of American constitutionalism are emphasized throughout and contemporary political and policy questions facing the country are examined.

Notes about this minor:

- This minor is closed to students majoring in political science.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
POLS-110	American Politics
Electives	
*Choose four of the following:**	
POLS-115	Ethical Debates Amer Politics
POLS-200	Law & Society
POLS-250	State & Local Politics
POLS-280	Artificial Intelligence and the Political Good
POLS-290	Politics and the Life Sciences
POLS-295	Cyberpolitics
POLS-300	Rhetoric & Political Deliberation
POLS-305	Political Parties and Voting
POLS-310	The Congress
POLS-315	The Presidency
POLS-320	American Foreign Policy
POLS-340	Medicine, Morality, and Law
POLS-345	Politics and Public Policy
POLS-355	Political Leadership
POLS-365	Anarchy, Technology & Utopia
POLS-415	Evolution and the Law
POLS-420	Primate Politics
POLS-425	Constitutional Law
POLS-430	Constitutional Rights and Liberties
POLS-435	American Political Thought
POLS-460	Classical Constitutionalism, Virtue & Law
POLS-465	Modern Constitutionalism, Liberty & Equality
POLS-481	Women in Politics
POLS-485	Politics Through Fiction
POLS-490	Politics Through Film
POLS-525	Special Topics in Political Science

* At least two courses must be taken at the 300-level or higher.

American Sign Language and Deaf Cultural Studies

Jillian Sinclair, Minor Advisor
jlsnts@rit.edu

Program overview

The American Sign Language and deaf cultural studies minor prepares students in the multidisciplinary study of American Sign Language and deaf culture. The minor is open to hearing and deaf students enrolled in all bachelor's degree programs. Courses in the minor address topics in the field of ASL and DCS including the study of ASL and its structure, ASL literature, literature in English pertaining to the D/deaf experience, the history of D/deaf people in America and around the world, Deaf art and cinema, the experience of D/deaf people from racial, ethnic, and other minority groups, oppression in the lives D/deaf people, and various political, legal, and educational issues affecting members of the D/deaf community. The minor complements majors in fields such as business, imaging arts and sciences, health sciences, policy studies, professional and technical communication, psychology, and numerous scientific and technical fields.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
Option 1: For students who are not proficient in ASL:	
MLAS-201	Beginning American Sign Language I
MLAS-202	Beginning American Sign Language II
Option 2: For students who are proficient in ASL, choose five Electives	
Electives*	
Option 1: Choose three or four of the following courses†:	
Option 2: Choose five of the following courses†:	
Language courses:	
MLAS-301	Intermediate Sign Language I
MLAS-302	Intermediate Sign Language II
MLAS-351	Linguistics Of American Sign Language
MLAS-352	American Sign Language Literature
MLAS-401	Advanced American Sign Language I
MLAS-402	Advanced American Sign Language II
Deaf cultural studies courses:	
ENGL-417	Deaf Literature
HIST-230	American Deaf History
HIST-231	Deaf People in Global Perspective
HIST-330	Deafness and Technology
HIST-333	Diversity in the Deaf Community
HIST-335	Women and the Deaf Community
NHSS-251	Deaf Culture and Contemporary Civilization
NHSS-275	Visual Expressions of Deaf Culture
SOCI-240	Deaf Culture in America
VISL-440	Deaf Art & Cinema

* At least one course must be at the 300 level or higher.
† Students who wish to focus their studies on ASL should choose two language courses. Students who wish to focus on Deaf Cultural Studies should choose three or four DCS courses depending on their proficiency in ASL. Students who prefer a balance of ASL and DCS courses may freely distribute their electives across ASL and DCS in a manner consistent with their ASL proficiency and course prerequisites.

Anthropology and Sociology

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The minor in anthropology and sociology offers disciplinary insights on understanding human social life, both from local and global perspectives. Through anthropology we discover and appreciate the diversity of other cultural systems on a global scale. Through sociology we discover how our own lives are influenced by social relationships around us. Careful selection of courses provides insights into a wide range of topics such as human history and prehistory through archaeology, gender and sexuality, race, ethnicity, social class, inequality, health, urban life and cities, cultural images and mass media, war and violence, social movements, social and cultural change, and globalization.

Notes about this minor:

- This minor is closed to students majoring in sociology and anthropology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
Choose one of the following:	
ANTH-102	Cultural Anthropology
ANTH-102H	Honors Cultural Anthropology
ANTH-103	Archaeology and the Human Past
ANTH-104	Language and Linguistics
ANTH-105	Humans, Health, Technology
INGS-101	Global Studies
SOCI-102	Foundations of Sociology
SOCI-102H	Honors Sociology
Electives	
Choose four of the following:	
ANTH-210	Culture and Globalization
ANTH-215	Field Methods in Archaeology
ANTH-220	Language and Culture: Introduction to Linguistic Anthropology
ANTH-230	Buried Treasure: Archaeology in Popular Culture
ANTH-235	Immigration to the U.S.
ANTH-244	Human Centered Design Queries: An Anthropological Approach
ANTH-245	Ritual and Performance
ANTH-246	Gender and Health
ANTH-250	Themes in Archaeological Research
ANTH-255	Regional Archaeology
ANTH-260	Native North Americans
ANTH-265	Native Americans in Film
ANTH-270	Cuisine, Culture, and Power
ANTH-295	Global Public Health
ANTH-301	Social and Cultural Theory
ANTH-302	Qualitative Research
ANTH-303	Statistics in the Social Sciences
ANTH-310	African Film
ANTH-312	People Before Cities
ANTH-325	Bodies and Culture
ANTH-328	Heritage and Tourism
ANTH-335	Culture and Politics in Latin America
ANTH-341	Global Addictions
ANTH-345	Genocide and Transitional Justice
ANTH-360	Humans and Their Environment
ANTH-361	Sociology of Numbers
ANTH-375	Native American Sovereignty, Culture, and Resources
ANTH-385	Anthropology and History
ANTH-410	Global Cities
ANTH-415	Archaeological Science
ANTH-420	Exploring Ancient Technology
ANTH-425	Global Sexualities
ANTH-430	Visual Anthropology
ANTH-435	The Archaeology of Death
ANTH-489	Topics in Anthropology
INGS-101	Global Studies
SOCI-210	Black America-Culture & HipHop
SOCI-215	The Changing Family
SOCI-220	Minority Group Relations
SOCI-225	Social Inequality
SOCI-230	Sociology of Work
SOCI-235	Women, Work, and Culture
SOCI-240	Deaf Culture in America
SOCI-246	Gender and Health
SOCI-295	Global Public Health
SOCI-300	Sociology of American Life
SOCI-301	Social and Cultural Theory
SOCI-302	Qualitative Research
SOCI-303	Statistics in the Social Sciences
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-322	Health and Society
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-355	Cyber Activism: Diversity, Sex and the Internet
SOCI-361	Sociology of Numbers
SOCI-395	Borders:Humans, Boundaries, and Empires
SOCI-489	Topics in Sociology

Applied Cognitive Neuroscience

Elena Fedorovskaya, Minor Advisor
585-475-6952, eafppr@rit.edu

Program overview

Explore the biological underpinnings of cognition, delving into the science of the brain to understand the mental processes behind cognition and perception, particularly visual perception.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Choose one of the following sequences:	
BIOL-101	General Biology I
BIOL-102	General Biology II
BIOL-103	General Biology I Lab
BIOL-104	General Biology II Lab
or	
BIOL-123	Introduction to Biology: Organisms and Ecosystems
BIOL-124	Introduction to Biology: Molecules and Cells
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells
PSYC-101	Introduction to Psychology
Required Courses	
CGNS-222	Introduction to Cognitive Neuroscience
CGNS-451	Cognitive Neuroscience Seminar A
CGNS-452	Cognitive Neuroscience Seminar B
PSYC-222	Biopsychology
Electives–Students must choose a total of three elective courses with at least one coming from each category. At least two courses must be taken at the 300-level or higher.	
Psychology	
PSYC-223	Cognitive Psychology
PSYC-224	Perception
PSYC-410	Psychophysiology
PSYC-430	Memory and Attention
PSYC-431	Language and Thought
PSYC-432	Decision Making, Judgement, and Problem Solving
Science	
BIOL-205	Animal Behavior
BIOL-206	Molecular Biology
BIOL-302	Cell Biology
BIOL-309	Comparative Vertebrate Anatomy
BIOL-313	Comparative Animal Physiology
BIOL-428	Eukaryotic Gene Regulation and Disease
CGNS-322	Animal Vision
CLRS-600	Fundamentals of Color Science
IMGS-221	Vision & Psychophysics
MEDS-250	Human Anatomy and Physiology I
MEDS-425	Introduction to Neuroscience

* At least two courses must be taken at the 300-level or higher.

Applied Statistics

Carol Marchetti, Minor Advisor
5854752515, cemsma@rit.edu

Program overview

Deepen your technical background and gain further appreciation for modern mathematical sciences and the use of statistics as an analytical tool.

Notes about this minor:

- The minor is closed to students majoring in applied statistics and data analytics.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisites	
Choose one of the following course sequences:	
MATH-181	Calculus I
MATH-182	Calculus II
or	
MATH-171	Calculus A
MATH-172	Calculus B
MATH-173	Calculus C
Electives	
Choose five of the following:	
MATH-251	Probability and Statistics
MATH-505	Stochastic Processes
STAT-205	Applied Statistics*
STAT-257	Statistical Inference*
STAT-305	Regression Analysis
STAT-325	Design of Experiments
STAT-335	Introduction to Time Series
STAT-345	Nonparametric Statistics
STAT-405	Mathematical Statistics I
STAT-406	Mathematical Statistics II
STAT-425	Multivariate Analysis
STAT-521	Statistical Quality Control
STAT-511	Statistical Software - R
STAT-547	Data Mining
STAT-572	Survey Design and Analysis
STAT-584	Categorical Data Analysis

* STAT-257 and STAT-205 cannot both be taken for credit.

Archaeology

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

Archaeology is the study of the human past, principally by means of the physical residue of past human behavior. Archaeological science is the application of techniques from the physical sciences to research problems in archaeology and related disciplines. Over the past six decades archaeological science has provided powerful tools for understanding the past, ranging from absolute dating to bone chemistry. It has become an established sub-field within the discipline of archaeology, which itself has grown during the same period from a discipline largely focused on cultural history (the use of artifacts to reconstruct regional cultural sequences) and the validation of documentary history to the explanation of the processes of cultural change in the past.

Notes about this minor:

- This minor is closed to students majoring in sociology and anthropology who have chosen a track in archaeology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
ANTH-103	Archaeology and the Human Past
Electives	
Choose two courses from each of the following groups:	
Disciplinary	
ANTH-230	Buried Treasure: Archaeology in Popular Culture
ANTH-250	Themes in Archaeological Research
ANTH-255	Regional Archaeology
ANTH-312	People Before Cities
Applied/Laboratory	
ANTH-215	Field Methods in Archaeology
ANTH-360	Humans and Their Environment
ANTH-375	Native American Sovereignty, Culture, and Resources
ANTH-415	Archaeological Science
ANTH-420	Exploring Ancient Technology
ANTH-435	The Archaeology of Death

Art History

Nate Rohman, Minor Advisor
585-475-5760, nmrpgd@rit.edu

Program overview

Explore the history of art, architecture, craft, design, photography, and aesthetic theory across multiple cultures, eras, and intellectual perspectives. Art historians examine a society's artistic production, analyzing form, content, and process to better understand how art expresses meaning within specific cultural contexts. Students completing this minor will be able to use art historical and related methodologies to evaluate works of art, formulate a history of artistic styles, analyze art in relation to its historical setting, and engage with the world of contemporary art. The minor's emphasis on writing and critical thinking complements any academic program while the inclusion of visual analysis, historical context, and theoretical approaches to artistic production make this a useful addition for students seeking careers in areas such as the fine arts, education, design, communication, game design, museum and gallery work, or digital humanities.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
Choose one of the following:	
ARTH-124	Survey: Themes in the History of Art
ARTH-135	Survey: Ancient to Medieval
ARTH-136	Survey: Renaissance to Modern
ARTH-137	Survey: Arts of the Ancient Americas
ARTH-138	Survey: Latin American Art: Colonial to Contemporary
ARTH-139	Survey: Materials and Meanings
Electives	
*Choose five of the following:**	
ARTH-311	Art and Architecture of Italy: 1250-1400
ARTH-312	Art and Architecture of Italy: 1600-1750
ARTH-317	Art and Architecture in Florence and Rome: 15th Century
ARTH-318	Art and Architecture in Florence and Rome: 16th Century
ARTH-364	The Art of Paris: Monuments, Museums, Modernity
ARTH-366	18th,19th Century Art
ARTH-368	20th Century Art: 1900-1950
ARTH-369	20th Century Art: Since 1950
ARTH-373	Art of the Last Decade
ARTH-378	Baroque Painting in Flanders
ARTH-379	Renaissance Painting in Flanders
ARTH-392	Theory And Criticism of 20th Century Art
ARTH-400	Seminar: Research in Art History
ARTH-457	Art and Activism
ARTH-500	Postmodernism and After: Contemporary Aesthetics
ARTH-521	The Image
ARTH-541	Art and Architecture of Ancient Rome
ARTH-544	Illuminated Manuscripts
ARTH-549	Topics in Global Art and Architecture:
ARTH-550	Topics in Art History
ARTH-551	Topics in Art History, Writing Intensive:
ARTH-555	Topics in Medieval Art and Architecture
ARTH-556	Art Comics
ARTH-558	The Gothic Revival
ARTH-561	Latin American Art
ARTH-563	Modern Architecture
ARTH-568	Art and Technology: from the Machine Aesthetic to the Cyborg Age
ARTH-571	Extreme Abstraction
ARTH-572	Art of the Americas
ARTH-573	Conceptual Art
ARTH-574	Dada and Surrealism
ARTH-576	Modernism and Its Other: Realism in the Shadow of Expressionism
ARTH-577	Displaying Gender
ARTH-578	Edvard Munch
ARTH-581	Realism and the Avant-Garde in Russian Art
ARTH-583	Installation Art
ARTH-584	Scandinavian Modernism
ARTH-586	History of Things: Studies in Material Culture
ARTH-588	Symbols and Symbol Making: Psychoanalytic Perspective on Art
DDDD-302	History of Digital Graphics
GRDE-205	History of Graphic Design
GRDE-322	Women Pioneers in Design
GRDE-326	20th Century Editorial Design History
IDDE-221	History of Industrial Design
PHAR-211	Histories and Aesthetics of Photography I
PHAR-212	Histories and Aesthetics of Photography II

* At least two courses must be taken at the 300-level or higher.

Art of Science/Science of Art

Susan Farnand, Minor Advisor
585-475-4567, Susan.Farnand@rit.edu

Program overview

Explore the impact of art on science and science on art along with the synergistic overlaps between the two. Specifically, students learn how art and design can be applied in good scientific practice and how the sciences impact the materials, processes, and ultimate perceptual enjoyment of the visual arts.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
Integrative Seminar	
CLRS-101	Art of Science of Art
Students must complete a total of three courses with one course coming from each of the following groups:	
Sciences	
CLRS-201	Color Science for the Visual Arts
IMGS-111	Imaging Science Fundamentals
IMGS-221	Vision & Psychophysics
SOFA-103	Introduction to Imaging and Video Systems
Arts	
ITDI-211	Drawing for Non-Majors
IDEA-221	Design for Non-Majors I
CCER-128	Josiah Wedgwood's Legacy
PHAR-150	Introduction to Film Photography
Humanities	
ARTH-136	Survey: Renaissance to Modern
MUSE-220	Introduction to Museums
MUSE-224	History & Theory of Exhibitions
MUSE-225	Museums & the Digital Age
MUSE-226	Introduction to Digital Cultural Heritage
PSYC-224	Perception
Electives–Students must complete a total of two elective courses. At least two courses must be taken at the 300-level or higher.	
IMGS-351	Fundamentals of Color Science
PSYC-222	Biopsychology
PSYC-223	Cognitive Psychology
ARTH-521	The Image
ARTH-544	Illuminated Manuscripts
MUSE-340	Introduction to Archival Studies
MUSE-359	Digital and Critical Curation
MUSE-360	Visitor Engagement & Museum Technologies
MUSE-361	Tablet to Tablet: A History of Books

ASL Performance

Program overview

The ASL performance minor focuses on forms of creative expression that are unique to Deaf communities and signed language. You will develop conceptual, analytical, and artistic skills through analysis and practice. Given that this minor focuses on the study and use of sign language in a performance environment, a minimum score of 3 on the ASL placement exam; or successful completion of Intermediate Sign Language I (MLAS-301), American Sign Language III (INTP-126), NTID American Sign Language II (NASL-200), or equivalent course; or department permission is required for admission to the minor. Instruction is in ASL and voice interpreters will not be provided.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
PRFN-214	Appreciation of Artistic Sign Language
PRFN-218	Theatre Practicum
PRFN-413	History of Deaf Performance
Deaf Electives	
Choose one of the following:	
NHSS-251	Deaf Culture and Contemporary Civilization
NHSS-275	Visual Expression of Deaf Culture
HIST-230	American Deaf History
SOCI-240	Deaf Culture in America
Electives	
Choose six credits of the following:*	
PRFN-111	Sign Mime, Creative Movement, and Visual Theatre
PRFN-199	Independent Study: Performing Arts
PRFN-211	Acting with Physical Expression
PRFN-218	Theatre Practicum
PRFN-219	Seminar in Performing Arts
PRFN-289	Special Topics: Performing Arts
PRFN-314	ASL Musicality
PRFN-414	Theatrical Translation
MLAS-352	American Sign Language Literature

* At least one of the electives taken must be 300-level or higher.

Astronomy

Andrew Robinson, Minor Advisor
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Program overview

This minor provides students with an opportunity for additional study in astronomy in order to build a secondary area of expertise in support of their major or other areas of interest. It will provide students with a broad foundational background in astronomy in preparation for graduate studies in astronomy or astrophysics. The minor is interdisciplinary and offered jointly by the School of Physics and Astronomy and the Chester F. Carlson Center for Imaging Science.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisites	
MATH-181	Calculus I
MATH-182	Calculus II
PHYS-211	University Physics I
PHYS-212	University Physics II
PHYS-213	Modern Physics I
Required Course	
PHYS-220	University Astronomy
Astrophysics	
Choose one of the following:	
PHYS-370	Stellar Astrophysics
PHYS-371	Galactic Astrophysics
PHYS-372	Extragalactic Astrophysics and Cosmology
Experimental	
Choose one of the following:	
IMGS-513	Multi-Wavelength Astronomical Imaging
IMGS-528	Design and Fabrication of Solid State Cameras
PHYS-373	Observational Astronomy
Electives	
Choose two of the following:	
IMGS-361	Image Processing and Computer Vision I
IMGS-362	Image Processing & Computer Vision II
IMGS-451	Imaging Detectors
IMGS-513	Multi-wavelength Astronomical Imaging
IMGS-528	Design and Fabrication of Solid State Cameras
PHYS-370	Stellar Astrophysics*
PHYS-371	Galactic Astrophysics*
PHYS-372	Extragalactic Astrophysics and Cosmology*
PHYS-373	Observational Astronomy
PHYS-493	Astrophysics Research

† At least two courses must be taken at the 300-level or higher.
* PHYS-213 (Modern Physics I) is a prerequisite for PHYS-370 (Stellar Astrophysics), PHYS-371 (Galactic Astrophysics), and PHYS-372 (Extragalactic Astrophysics and Cosmology).
NOTE: PHYS-370, PHYS-371,PHYS-372, and PHYS-373 are offered in alternate years. Contact the Astronomy Minor Advisor for the schedule.

Beverage Management

Matthew Cornwell, Minor Advisor
585-475-6916, mcornwell@saunders.rit.edu

Program overview

This beverage management minor provides you with the knowledge needed for the effective management of beverage services in both the on-premises and retail sectors. You will identify trends and develop an understanding of various aspects of the food, wine, beer, and spirit industries. You will also learn food and beverage management principles that demonstrate how providing exceptional service to guests and customers can maximize profits in the hospitality industry.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
HSPT-335	Food and Beverage Management
HSPT-375	Customer Experience Management
Electives	
Choose 6 credits from the following:	
HSPT-160	Beers of the World
HSPT-161	Wines Of the World I
HSPT-162	Wines Of the World II
HSPT-163	Wine Connoisseur
HSPT-165	Wine And Food Pairing I
HSPT-173	Beverage Fermentation and Distillation
Electives	
Choose 3 credits from the following:	
HSPT-175	Marketing Wine, Beer and Spirits
DECS-435	Supply Chain Management Fundamentals
MKTG-230	Principles of Marketing
MKTG-330	Global Marketing

Bioinformatics Analysis

Feng Cui, Minor Advisor
585-475-4115, fxcsbi@rit.edu

Program overview

The bioinformatics analysis minor immerses students in the core challenges and strengths of the field of bioinformatics, as well as the ethical issues involved. Students gain hands-on experience implementing some of the core algorithms utilized by professionals in the field.

Notes about this minor:

- This minor is closed to students majoring in bioinformatics and computational biology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisites	
Students must complete the following courses or their equivalent:	
BIOL-101	General Biology I
BIOL-103	General Biology I Lab
BIOL-102	General Biology II
BIOL-104	General Biology II Lab
or	
BIOL-123	Introduction to Biology: Organisms and Ecosystems
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems
BIOL-124	Introduction to Biology: Molecules and Cells
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells
and	
BIOL-206	Molecular Biology
Students must complete the following courses or their equivalent:	
CHMG-141	General & Analytical Chemistry I
CHMG-145	General & Analytical Chemistry I Lab
or	
CHEM-151	General Chemistry
CHEM-155	Chemistry Workshop
or	
CHMG-131	General Chemistry for Engineers
Required Courses	
BIOL-130	Introduction to Bioinformatics
BIOL-135	Introduction to Bioinformatics Programming
BIOL-327	Fundamental Bioinformatics Analysis
Electives	
Choose two of the following:	
BIOL-230	Bioinformatics Languages
BIOL-235	Fundamentals of Bioinformatics Programming
BIOL-296	Ethical Issues in Biology and Medicine
BIOL-470	Statistical Analysis for Bioinformatics
BIOL-530	Bioinformatics Algorithms
BIOL-550	High Throughput Sequencing Analysis
BIOL-594	Molecular Modeling and Proteomics
BIOL-635	Bioinformatics Seminar

Biology: Cellular and Molecular

L. Kate Wright, Minor Advisor
585-475-4669, lkwsbi@rit.edu

Program overview

The biology: cellular and molecular minor provides students with opportunities to experience and explore topics related to both the cellular and molecular aspects of modern biology to broaden and enhance their educational experience.

Notes about this minor:

- This minor is closed to students majoring in biochemistry, bioinformatics and computational biology, biology, biomedical sciences, and biotechnology and molecular bioscience.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Choose one of the following sequences:	
BIOL-101	General Biology I
BIOL-103	General Biology I Lab
BIOL-102	General Biology II
BIOL-104	General Biology II Lab
or	
BIOL-123	Introduction to Biology: Organisms and Ecosystems
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems
BIOL-124	Introduction to Biology: Molecules and Cells
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells
Choose one of the following sequences:	
CHMG-141	General & Analytical Chemistry I
CHMG-145	General & Analytical Chemistry I Lab
or	
CHEM-151	General Chemistry
CHEM-155	General Chemistry Workshop
or	
CHMG-131	General Chemistry for Engineers
Required Courses	
BIOL-206	Molecular Biology
BIOL-216	Molecular Biology Laboratory
Electives*	
Elective choices should total a minimum of 11 credit hours	
BIOL-204	Introduction to Microbiology
BIOL-218	Biology of Plants
BIOL-265	Evolutionary Biology
BIOL-302	Cell Biology
BIOL-305	Plants, Medicine and Technology
BIOL-311	Introduction to Microbiology
BIOL-321	Genetics
BIOL-322	Developmental Biology
BIOL-327	Fundamental Bioinformatics Analysis
BIOL-340	Genomics
BIOL-375	Advanced Immunology
BIOL-401	Biological Separations: Principles and Practices
BIOL-403	Fundamentals of Plant Biochemistry and Pathology
BIOL-404	Microbiology of Fermentation
BIOL-408	Biology of Cancer
BIOL-412	Human Genetics
BIOL-415	Virology
BIOL-416	Plant Biotechnology
BIOL-418	Plant Molecular Biology
BIOL-420	Bacterial-Host Interactions: Microbiomes of the World
BIOL-427	Microbial and Viral Genetics
BIOL-441	Genetic Engineering and Synthetic Biology

* At least two courses must be taken at the 300-level or above.

Biology: Ecology and Evolution

L. Kate Wright, Minor Advisor
585-475-4669, lkwsbi@rit.edu

Program overview

The biology: ecology and evolution minor provides students with the opportunity to experience both the ecological and evolutionary underpinnings of modern biology. The minor explores these areas of biology through laboratory and field experiences.

Notes about this minor:

- The minor is closed to students majoring in biology or environmental science (who have chosen the biology concentration).
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Choose one of the following sequences:	
BIOL-101	General Biology I
BIOL-103	General Biology I Lab
BIOL-102	General Biology II
BIOL-104	General Biology II Lab
or	
BIOL-123	Introduction to Biology: Organisms and Ecosystems
BIOL-125	Introduction to Biology Laboratory: Organisms and Ecosystems
BIOL-124	Introduction to Biology: Molecules and Cells
BIOL-126	Introduction to Biology Laboratory: Molecules and Cells
Required Course	
Choose at least one of the following:	
BIOL-240	General Ecology
BIOL-265	Evolutionary Biology
Electives*	
Elective choices should total a minimum of 11 credit hours	
BIOL-205	Animal Behavior
BIOL-207	Galapagos: Ecology and Evolution
BIOL-211	Invertebrate Zoology
BIOL-212	Vertebrate Zoology
BIOL-218	Biology of Plants
BIOL-220	Biology of Fungi and Insects
BIOL-240	General Ecology
BIOL-265	Evolutionary Biology
BIOL-290	Vertebrate Evolution
BIOL-293	Evolution and Creationism
BIOL-309	Comparative Vertebrate Anatomy
BIOL-313	Comparative Animal Physiology
BIOL-343	Tropical Ecology
BIOL-365	Introduction to Population Genetics
BIOL-371	Freshwater Ecology
BIOL-385	Seneca Park Zoo Internship
BIOL-444	Ornithology
BIOL-455	Biogeography
BIOL-573	Marine Biology
BIOL-575	Conservation Biology
ENVS-305	Urban Ecology
ENVS-311	Wetlands
ENVS-531	Climate Change: Science, Technology & Policy
MEDS-250	Human Anatomy and Physiology I
MEDS-251	Human Anatomy and Physiology II

* At least two courses must be taken at the 300-level or higher.

Black Studies

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

Examine the social construction of racial differences and their relation to the perpetuation of racism and racial domination. A key component of this minor is an investigation of the meanings and dimensions of blackness that reverberate from slavery and colonialism to the persistent political, social, and cultural implications in the 21st century. The minor emphasizes how blackness intersects with other ethnic identities and how it is shaped by gender, sexuality, and economic inequities. The aim is to refine and advance students' knowledge of black life-worlds and experiences across the globe.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
Choose at least one of the following:	
COMM-306	Rhetoric Of Race Relations
SOCI-210	Black America-Culture & HipHop
Electives	
Choose four of the following:	
ANTH-246	Gender and Health
ANTH-310	African Film
ANTH-335	Culture and Politics in Latin America
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-410	Global Cities
ANTH-430	Visual Anthropology
ANTH-489	Topics in Anthropology*
COMM-306	Rhetoric Of Race Relations
CRIM-285	Minority Groups and the Criminal Justice System
ENGL-316	Global Literature*
ENGL-413	African American Literature
ENGL-414	Women and Gender in Literature and Media*
FNRT-203	American Popular & Rock Music
FNRT-322	Survey of Jazz
MLSP-352	Caribbean Cinema
PRFL-324	African American Playwrights
SOCI-210	Black America-Culture & HipHop
SOCI-220	Minority Group Relations
SOCI-246	Gender and Health
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-361	Sociology of Numbers
SOCI-489	Topics in Sociology*

* This course may be used when the topic is Caribbean Literature or Black Studies related.

Business Administration

Matthew Cornwell, Minor Advisor
585-475-6916, mcornwell@saunders.rit.edu

Program overview

This minor is appropriate for undergraduate students interested in broad exposure to the world of business. Undergraduate students interested in pursuing an MBA degree may use this minor to fulfill certain MBA bridge courses.

Notes about this minor:

- This minor is closed to students majoring in any undergraduate program in Saunders College of Business.
- Three courses from a list of nine courses must be taken. Two additional Saunders College elective courses are required. These elective courses may be any Saunders course.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Electives:	
ACCT-110	Financial Accounting
BLEG-200‡	Business Law I
BLEG-250‡	Law, Business, and Society
DECS-310	Operations Management
FINC-120	Personal Financial Management *
FINC-220	Financial Management *
INTB-225	Global Business Environment
MGMT-215	Organizational Behavior
MKTG-230	Principles of Marketing
Students may use only one of the following courses towards a minor elective.	
MGMT-101	Business 1: Introduction to Business Communication, Planning & Analysis
MGMT-103	Business 2T: Business Planning Tools and Practices
MGMT-150	Business 1T: An Introduction to Business

* Student may choose only one of the finance courses.
‡ Student may choose only one of the business law courses.

Business Analytics

Matthew Cornwell, Minor Advisor
585-475-6916, mcornwell@saunders.rit.edu

Program overview

The business analytics minor is designed for students who are interested in data analysis that supports business decision making and enhances organizational outcomes. The minor offers a strong complement for students in any major who would like to develop their skills in the management, analysis, visualization, and application of contemporary business data.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
BANA-255	Data Literacy, Analytics and Decision Making
Choose four of the following:	
ACCT-445	Accounting Information Systems
DECS-310	Operations Management
DECS-435	Supply Chain Management Fundamentals
FINC-425	Stock Market Algorithmic Trading
FINC-580	Financial Analytics
HSPT-225	Hospitality and Tourism Management Fundamentals
HSPT-315	Lodging Operations Analytics and Management
MGIS-320	Database Management Systems
MGIS-350	Developing Business Applications
MGIS-355	Business Intelligence
MGIS-450	Enterprise Systems
MKTG-365	Marketing Analytics
MKTG-410	Search Engine Marketing and Analytics

SAMPLE TRACKS*	
Accounting Focus:	
ACCT-110	Financial Accounting
ACCT-445	Accounting Information Systems
Finance Focus:	
FINC-220	Financial Management
FINC-580	Financial Analytics
Hospitality and Tourism Management Focus:	
HSPT-225	Hospitality and Tourism Management Fundamentals
HSPT-315	Lodging Operations Analytics and Management
Marketing Focus:	
MKTG-230	Principles of Marketing
MKTG-365	Marketing Analytics
MKTG-410	Search Engine Marketing and Analytics
MIS Focus:	
MGIS-320	Database Management Systems
MGIS-350	Developing Business Applications
MGIS-355	Business Intelligence
Supply Chain Management Focus:	
DECS-310	Operations Management
DECS-435	Supply Chain Management Fundamentals

* Within each track, students would be required to complete BANA-255 and two to three other minor electives as delineated. If students wish to do one of the focused tracks, students are able to use the pre-req classes to be used toward the elective course requirement. However, students cannot use only pre-req classes to satisfy the elective course requirement.

Ceramics

Program overview

The ceramics minor enables you to develop craftsmanship and skills in both traditional throwing, hand building, and sculptural work in clay while also engaging in aesthetic and creative problem solving associated with the material and processes. You will investigate an individual design language and personal aesthetic through the creation of various processes and techniques in ceramics.

Notes about this minor:

- This minor is closed to students majoring in the studio arts BFA who have chosen the ceramics option.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
Choose one of the following:	
CCER-124	Clay Studio Survey
CCER-128	Josiah's Wedgwood's Legacy
Electives	
Choose four of the following:	
CCER-206	Ceramic Sculptural Processes
CCER-211	Thrown Vessel Forms
CCER-511	Ceramic Processes
CCER-513	Thrown Sculptural Forms
CCER-530	Ceramics 3 Credit Elective

Chemical Engineering Systems Analysis

Steven Weinstein, Minor Advisor
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Program overview

The minor in chemical engineering systems analysis provides students with a sophisticated understanding of the application of scientific knowledge to the solution of a vast array of practical problems in which chemistry plays a critical role. Students are taught the systems methodologies that chemical engineers employ to analyze and solve real world problems involving distinct chemical components, chemical reaction, multiple phases, and mass transfer.

Notes about this minor:

- This minor is closed to students majoring in chemical engineering or any combined accelerated degree (BS/MS) that includes the BS in chemical engineering.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
CHME-182	Chemical Engineering Insights II
CHME-230	Chemical Process Analysis
CHME-310	Applied Thermodynamics
CHME-330	Mass Transfer Operations
CHME-340	Reaction Engineering
Electives	
Choose one course from the following groups:	
Alternate Energy Systems	
CHEM-201	Clean Energy: Hydrogen Fuel Cells
MECE-529	Renewable Energy Systems
Advanced Materials	
CHMA-222	Chemical Separations
CHMG-201	Introduction to Organic Polymer Technology
MECE-557	Applied Biomaterials
Biomedical Engineering	
BIME-200	Introductory Musculoskeletal Biomechanics
BIME-370	Introduction to Biomaterials Science
MECE-358	Contemporary Issues in Bioengineering
MECE-407	Biomedical Device Eng
Chemical Engineering	
CHME-320	Continuum Mechanics I
CHME-350	Multiple Scale Material Science
CHME-421	Interfacial Phenomena
CHME-599	Independent Study
Environmental	
ISEE-787	Design for the Environment
MECE-357	Contemporary Issues in Energy And Environment
Semiconductor Processing	
MCEE-201	IC Technology
MCEE-503	Thin Films
MCEE-505	Lithography Materials and Processes

Chemistry

Christina Goudreau Collison, Minor Advisor
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Program overview

Chemistry is intrinsically a part of our society from the fuels we use, the air we breathe, and the water we drink to the complex chemical behaviors of our own bodies. Chemistry is involved in the development of myriad materials such as computer chips, packaging materials, and alternative fuels. Increasing numbers of policy and ethical choices facing the global community involve issues where chemistry plays a pivotal role. This minor provides students with the opportunity to study chemistry in order to build a secondary area of expertise in support of their major or as an additional area of interest.

Notes about this minor:

- This minor is closed to students majoring in biochemistry and chemistry.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
CHMG-141	General & Analytical Chemistry I
CHMG-145	General & Analytical Chemistry I Lab
CHMG-142	General & Analytical Chemistry II
CHMG-146	General & Analytical Chemistry II Lab
or	
CHMG-131	General Chemistry for Engineers
CHMG-145	General & Analytical Chemistry I Lab
or	
CHEM-151	General Chemistry
CHEM-155	Chemistry Workshop
Required Courses	
CHMO-231	Organic Chemistry I
CHMO-232	Organic Chemistry II
CHMO-235	Organic Chemistry Lab I
CHMO-236	Organic Chemistry Lab II
Electives	
Choose at least 9 credits from the following:	
CHEM-301	Undergraduate Teaching Experience†
CHEM-493	Chemistry Research†
CHEM-495	Advanced Chemistry Research†
CHMA-161	Quantitative Analysis
CHMA-261	Instrumental Analysis
CHMA-670	Advanced Concepts of Environmental Chemistry
CHMA-711	Advanced Instrumental Analysis
CHMB-402	Biochemistry I
CHMB-403	Biochemistry II
CHMB-460	Infectious Diseases: Impact Society & Culture
CHMB-493	Biochemistry Research†
CHMB-495	Advanced Biochemistry Research†
CHMB-610	Advanced Protein Biochemistry: Structure and Function
CHMI-351	Descriptive Inorganic Chemistry
CHMI-564	Structural Inorganic Chemistry
CHMI-664	Modern Inorganic Chemistry
CHMO-636	Spectrometric Identification of Organic Compounds
CHMO-637	Advanced Organic Chemistry
CHMO-710	Literature Exploration of Organic Synthesis
CHMO-739	Advanced Physical Organic Chemistry
CHMO-750	Survey of Organic Named Reactions
CHMP-341	Physical Chemistry I
CHMP-342	Physical Chemistry II
CHMP-752	Molecular Photophysics and Photochemistry
CHMP-753	Computational Chemistry
CHPO-706	Polymer Synthesis
CHPO-707	Polymer Chemistry II

† Students may use Undergraduate Teaching Experience (CHEM-301), Chemistry Research (CHEM-493), Advanced Chemistry Research (CHEM-495), Biochemistry Research (CHMB-493), and Advanced Undergraduate Research Experience (CHMB-495) to satisfy up to 3 of the 9 credit hours required for the elective courses. The remaining 6 credit hours must come from other courses on the electives list.

Communication

Keri Barone, Minor Advisor
585-475-5262, klbgpt@rit.edu

Program overview

Students gain a foundation in human communication theories, research, and skills. Students select courses in mass media analysis, communication in professional and organizational contexts, communication skills, and critical reflection of and on communication in society.

Notes about this minor:

- This minor is closed to students majoring in communication.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
Choose one of the following:	
COMM-101	Human Communication
COMM-253	Communication
Electives	
*Choose four of the following:**	
COMM-142	Introduction to Technical Communication
COMM-201	Public Speaking
COMM-202	Mass Communications
COMM-223	Digital Design In Communication
COMM-272	Reporting and Writing for News Media
COMM-302	Interpersonal Communication
COMM-303	Small Group Communication
COMM-304	Intercultural Communication
COMM-305	Persuasion
COMM-341	Visual Communication
COMM-342	Communication Law and Ethics
COMM-343	Technology-Mediated Communication
COMM-344	Health Communication
COMM-503	Advanced Public Speaking

* At least two electives must be at the 300-level or higher.

Computer Engineering

Roy Melton, Minor Advisor
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Program overview

Students gain a foundation in digital systems design, an understanding of computer organization, and an introduction to embedded systems programming. They also build on this core through elective courses in the areas of hardware design, architectures, networks and systems.

Notes about this minor:

- The minor is closed to students majoring in computer engineering, computer engineering technology, or electrical engineering technology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisites	
CSCI-141	Computer Science I (or equivalent)
Plus one of the following:	
MATH-172	Calculus B
MATH-181	Calculus I
MATH-190	Discrete Mathematics for Computing
Required Courses	
CMPE-160	Digital System Design I
CMPE-250	Assembly and Embedded Programming
CMPE-350	Computer Organization
Electives	
Choose two of the following:	
CMPE-257	Introduction to Quantum Computing and Information Science
CMPE-260	Digital System Design II
CMPE-361	Introduction to Hardware Security
CMPE-380	Applied Programming in C
CMPE-460	Interface and Digital Electronics
CMPE-480	Digital Signal Processing
CMPE-530	Digital Integrated Circuit Design
CMPE-550	Computer Architecture
CMPE-570	Data and Communication Networks
CMPE-655	Multiple Processor Systems
CMPE-660	Reconfigurable Computing
CMPE-661	Hardware and Software Design for Cryptographic Applications
CMPE-663	Real-time & Embedded Systems
CMPE-664	Modeling of Real-Time Systems
CMPE-665	Performance Engineering of Real-Time and Embedded Systems
CMPE-677	Machine Intelligence
CMPE-679	Deep Learning
CMPE-685	Computer Vision
CMPE-731	Design and Test of Multi-Core Chips
CMPE-755	High Performance Architectures
CMPE-770	Wireless Networks

Computer Science

Karen Hirst, Minor Advisor
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Program overview

Explore an in-depth study of programming or sample selected theoretical or applied areas within the computer science field. At least two of the four electives must have course numbers of 300 or higher and students with the proper prerequisites may use graduate-level computer science courses toward the minor.

Notes about this minor:

- This minor is closed to students majoring in computer science.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Students must complete the following two-course programming sequence*:	
CSCI-141	Computer Science I
CSCI-142	Computer Science II
Students must complete the following calculus sequence†:	
MATH-181	Project-Based Calculus I
MATH-182	Project-Based Calculus II
Student must complete the following discrete mathematics course‡:	
MATH-190	Discrete Mathematics for Computing
Required Course	
CSCI-243	The Mechanics of Programming
Electives	
Choose four of the following:	
CSCI-250	Concepts of Computer Systems
CSCI-251	Concepts of Parallel and Distributed Systems
CSCI-261	Analysis of Algorithms
CSCI-262	Introduction to Computer Science Theory
CSCI-263	Honors Introduction to Computer Science Theory
CSCI-264	Honors Analysis of Algorithms
CSCI-320	Principles of Data Management
CSCI-331	Introduction to Artificial Intelligence
CSCI-335	Machine Learning
CSCI-344	Programming Language Concepts
CSCI-351	Data Communications and Networks
CSCI-352	Operating Systems
CSCI-420	Principles of Data Mining
CSCI-421	Principles of Database System Implementation
CSCI-431	Introduction to Computer Vision
CSCI-452	Systems Programming
CSCI-453	Computer Architecture
CSCI-455	Principles of Cybersecurity
CSCI-462	Introduction to Cryptography
CSCI-464	Xtreme Theory
CSCI-510	Introduction to Computer Graphics
CSCI-518	Collaborative Seminar in Computer Graphics
CSCI-519	Seminar in Computer Graphics
CSCI-521	Principles of Data Cleaning and Preparation
CSCI-529	Seminar in Data Management
CSCI-531	Introduction to Security Measurement
CSCI-532	Introduction to Intelligent Security Systems
CSCI-536	Information Retrieval
CSCI-539	Seminar in Artificial Intelligence
CSCI-541	Programming Skills
CSCI-549	Seminar in Languages and Tools
CSCI-559	Seminar in Systems
CSCI-569	Seminar in Theory
CSCI-599	Computer Science Undergraduate Independent Study
CSCI-610	Foundations of Computer Graphics
CSCI-620	Introduction to Big Data
CSCI-621	Foundations of Database System Implementation
CSCI-622	Data Security and Privacy
CSCI-630	Foundations of Artificial Intelligence
CSCI-631	Foundations of Computer Vision
CSCI-632	Mobile Robot Programming
CSCI-633	Biologically Inspired Intelligent Systems
CSCI-635	Introduction to Machine Learning
CSCI-636	Information Retrieval
CSCI-641	Advanced Programming Skills
CSCI-642	Secure Coding
CSCI-651	Foundations of Computer Networks
CSCI-652	Distributed Systems
CSCI-654	Foundations of Parallel Computing
CSCI-655	Foundations of Cybersecurity
CSCI-661	Foundations of Computer Science Theory
CSCI-662	Foundations of Cryptography
CSCI-664	Computational Complexity
CSCI-665	Foundations of Algorithms
CSCI-711	Global Illumination
CSCI-712	Computer Animation: Algorithms and Techniques
CSCI-713	Applied Perception in Graphics and Visualization
CSCI-714	Scientific Visualization
CSCI-715	Applications in Virtual Reality
CSCI-716	Computational Geometry
CSCI-719	Topics in Computer Graphics
CSCI-720	Big Data Analytics
CSCI-721	Foundations of Data Cleaning and Preparation
CSCI-722	Data Analytics Cognitive Comp
CSCI-723	Advanced Database Skills: Graph Databases
CSCI-724	Web Services and Service Oriented Computing
CSCI-725	Advanced Database Skills: NoSQL and NewSQL Data Systems
CSCI-729	Topics in Data Management
CSCI-731	Advanced Computer Vision
CSCI-732	Image Understanding
CSCI-734	Foundations of Security Measurement and Evaluation
CSCI-735	Foundations of Intelligent Security Systems
CSCI-736	Neural Networks and Machine Learning
CSCI-737	Pattern Recognition
CSCI-739	Topics in Intelligent Systems
CSCI-740	Programming Language Theory
CSCI-742	Compiler Construction
CSCI-746	Software Development Tools
CSCI-749	Topics in Languages and Tools
CSCI-759	Topics in Systems
CSCI-761	Topics in Advanced Algorithms
CSCI-762	Advanced Cryptography
CSCI-764	Quantum-Resistant Cryptography
CSCI-769	Topics in Theory

* An equivalent programming sequence may be determined by the minor advisor.
† An equivalent calculus sequence may be determined by the minor advisor.
‡ An equivalent discrete mathematics sequence may be determined by the minor advisor.

Construction Management

Brittany Rourke, Minor Advisor
585-475-3169, blrite@rit.edu

Program overview

The construction management minor broadens the learning experiences and professional opportunities of students who have an interest in building construction, bid development, management of construction projects after a successful bid, and the business, management, and technical aspects related to construction.

Notes about this minor:

- This minor is closed to students majoring in civil engineering technology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
CVET-462	Construction Project Management
CVET-464	Construction Planning, Scheduling and Control
CVET-561	Construction Cost Analysis and Management
Electives	
Choose two of the following:	
CVET-424	Building Information Modeling with Revit
CVET-465	Contracts and Specifications
CVET-505	Sustainable Building Design & Construction
ESHS-225	Construction Safety

Craft and Material Studies

Nate Rohman, Minor Advisor
585-475-5760, nmrpgd@rit.edu

Program overview

Students will develop knowledge of specific media, including wood, metal, ceramics, glass, and textiles. They also will study the material properties of these media and hone technical skills while expanding and applying critical thinking skills as they work through design process from ideation to fabrication. Students will also learn about expected working practices within collaborative studio spaces and within the discipline more broadly.

Notes about this minor:

- This minor is closed to students majoring in studio arts BFA who have chosen options in ceramics, glass, furniture design, or metals and jewelry design.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Electives*	
Choose five of the following for 15 credit hours:	
CCER-124	Clay Studio Survey
CCER-128	Josiah Wedgewood's Legacy
CCER-206	Ceramic Sculpture Processes
CCER-507	Mold Mechanisms
CCER-211	Thrown Vessel Forms
CCER-212	Thrown Sculptural Forms
CCER-530	Ceramics 3 Credit Elective
CGLS-124	Glass Studio Survey
CGLS-206	Molten Glass Practice I
CGLS-211	Mold and Kiln Glass Practice
CGLS-307	Hot Phenomena Glass Practice
CGLS-312	Kinetic Glass Practice
CGLS-530	Glass Processes
CMTJ-124	Metals and Jewelry Studio Survey
CMTJ-206	Methods and Practice
CMTJ-207	Design, Fabrication, and Forming
CMTJ-211	Design and Fabrication
CMTJ-212	Fabrication, Casting, and Mold Making
CMTJ-530	Form and Fabrication: Metals and Jewelry Design
CWFD-124	Woodworking / Furniture Design Studio Survey
CWFD-506	Furniture Design: Table Design and Construction
CWFD-507	Furniture Design: Bench Design and Construction
CWFD-511	Furniture Design: Wood Carving
CWFD-512	Furniture Design: Box and Cabinet Design and Construction
CWFD-530	Furniture Design 3 Credit Elective
CWTD-530	Quilting Elective
FDTN-132	3D Design II
FDTN-232	3D Design II Workshop: Topic

* At least two courses must be taken at the 200-level or above.

Creative Writing

Robert Glick, Minor Advisor
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Program overview

The creative writing courses offers students a practical, theoretical, and historical understanding of the art and craft of writing nonfiction and fiction prose and poetry, as well as experimenting in digital storytelling and interactive media. The minor encourages students to use those skills and insights for interdisciplinary projects and the enrichment of their careers and personal lives.

Notes about this minor:

- This minor is closed to students majoring in English with a concentration in creative writing.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Electives*	
Creative writing workshop courses:	
ENGL-211	Introduction to Creative Writing: Prose and Poetry
ENGL-212	Introduction to Creative Writing: Forms and Styles
ENGL-376	Experimental Writing
ENGL-386	World Building Workshop
ENGL-389	Digital Creative Writing Workshop
ENGL-390	Creative Writing Workshop
ENGL-392	Queer and Transgender Creative Writing Workshop
ENGL-490	Advanced Creative Writing Workshop
ENGL-511	Advanced Topics in Creative Writing
ENGL-543	Game-Based Fiction Workshop
Literature courses:	
ENGL-275	Storytelling: [Genre/Theme]
ENGL-307	Mythology & Literature
ENGL-308	Shakespeare Drama
ENGL-309	Topics in Literary Forms
ENGL-312	American Literature
ENGL-313	British Literature
ENGL-315	Digital Literature
ENGL-316	Global Literature
ENGL-318	Popular Literature
ENGL-373	Media Adaptation
ENGL-374	Games and Literature
ENGL-375	Storytelling Across Media
ENGL-377	Transmedia Storyworlds
ENGL-391	Dangerous Texts
ENGL-400	Literary & Cultural Studies
ENGL-414	Women and Gender in Literature and Media
ENGL-418	Great Authors
ENGL-419	Literature and Technology
ENGL-420	Science Fiction
ENGL-422	Maps, Spaces and Places
ENGL-450	Free & Open Source Culture

* Students choose either five creative writing workshop electives or four creative writing workshop electives and one literature elective.

Criminal Justice

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The criminal justice minor provides a foundation in the formal process of social control through the criminal justice system, how behavior is defined as criminal, how crime is measured, and how society responds to crime.

Notes about this minor:

- This minor is closed to students majoring in criminal justice.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
CRIM-110	Introduction to Criminal Justice
Electives	
Choose four of the following:	
CRIM-210	Technology in Criminal Justice
CRIM-220	Corrections
CRIM-230	Juvenile Justice
CRIM-240	Law Enforcement in Society
CRIM-260	Courts
CRIM-275	Crime and Violence
CRIM-285	Minority Groups and the Criminal Justice System
CRIM-299	Crime, Justice and Ethics
CRIM-350	Theories of Crime and Criminality
CRIM-489	Major Issues in Criminal Justice

Cyberpolitics

Program overview

A minor in cyberpolitics enables you to explore linkages between politics and technology, particularly in cyberspace. Connections include the politics of network effects, cyberspace and extremism, the ethical implications of cyberwar, computing and the digital space as disruptors of traditional governance, the political implications of artificial intelligence, and more.

Notes about this minor:

- This minor is closed to students majoring in political science.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
POLS-215	Tech, Ethics, and Global Politics
POLS-295	Cyberpolitics
Electives	
Choose three of the following:	
POLS-280	Artificial Intelligence and the Political Good
POLS-365	Anarchy, Tech, and Utopia
POLS-370	Cyberwar, Robots, and the Future of Conflict
CSEC-140	Introduction to Cybersecurity
PUBL-363	Cyber Security Policy and Law
SOCI-355	CyberActivism: Diversity, Sex, and the Internet

Cybersecurity

Liz Martin, Minor Advisor
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Program overview

With the prevalence of mobile computing, the advantages of cloud computing, the ubiquity of computing in general, and the issues of securing big data caused by the world-wide explosion of eBusiness and eCommerce today, secure computing environments and appropriate information management have become critical issues to all sizes and types of organizations. Therefore, there is a vital and growing need for all computing professionals to have a foundation in the issues critical to information security and how they apply to their specific disciplines. The minor consists of two required courses and three electives chosen by the student from the computing security advanced course clusters. There are many elective course choices to provide flexibility. Therefore, the minor provides any computing major outside of the computing security degree program with basic knowledge of the issues and technologies associated with computing security and allows students the opportunity to select a set of security electives that are complementary to their majors. Before beginning the minor in students must possess prerequisite knowledge that can be obtained from various programming sequences and courses in calculus and discrete math.

Notes about this minor:

- This minor is closed to students majoring in cybersecurity or any combined accelerated degree (BS/MS) that includes the BS in cybersecurity.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Students must complete one of the following two-course programming sequences:	
CPET-121	Computational Problem Solving I
CPET-321	Computational Problem Solving II
or	
CSCI-141	Computer Science I
CSCI-142	Computer Science II
or	
CSEC-123	Software Development and Problem Solving I
CSEC-124	Software Development and Problem Solving II
or	
GCIS-123	Software Development and Problem Solving I
GSCI-124	Software Development and Problem Solving II
or	
IGME-105	Game Development and Algorithmic Problem Solving I
IGME-106	Game Development and Algorithmic Problem Solving II
or	
ISTE-120	Computational Problem Solving in the Information Domain I
ISTE-121	Computational Problem Solving in the Information Domain II
or	
ISTE-123	Software Development and Problem Solving I
ISTE-124	Software Development and Problem Solving II
or	
SWEN-123	Software Development and Problem Solving I
SWEN-124	Software Development and Problem Solving II
Students must complete a two-course calculus sequence†:	
MATH-181	Project-Based Calculus I
MATH-182	Project-Based Calculus II
Student must complete one of the following courses in discrete mathematics:‡	
MATH-131	Discrete Mathematics
MATH-190	Discrete Mathematics for Computing
MATH-200	Discrete Mathematics and Introduction to Proofs
Required Courses	
Choose one of the following:	
CSEC-102	Information Assurance and Security
CSEC-140	Introduction to Cybersecurity
Choose one of the following:	
CSEC-362	Cryptography and Authentication
CSCI-462	Introduction to Cryptography
Electives	
Choose three of the following:	
CSEC-201	Programming for Information Security
CSEC-380	Principles of Web Application Security
CSEC-461	Computer System Security
CSEC-462	Network Security and Forensics
CSEC-464	Computer System Forensics
CSEC-465	Network and System Security Audit
CSEC-467	Mobile Device Security and Forensics
CSEC-468	Risk Management for Information Security
CSEC-470	Covert Communications
CSEC-471	Penetration Testing Frameworks & Methodologies
CSEC-472	Authentication and Security Models
CSEC-473	Cyber Defense Techniques
CSEC-476	Malware Reverse Engineering
CSEC-477	Disaster Recovery Planning and Business Continuity
CSEC-520	Cyber Analytics and Machine Learning
CSEC-569	Wireless Security
CSCI-455	Principles of Cybersecurity
CSCI-464	Xtreme Theory
CSCI-531	Introduction to Security Measurement
CSCI-532	Introduction to Intelligent Security Systems
SWEN-331	Engineering Secure Software

† An equivalent calculus sequence may be determined by the minor advisor.
‡ An equivalent discrete mathematics sequence may be determined by the minor advisor.

Cybersecurity Risk Management

Liz Martin, Minor Advisor
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Program overview

With the prevalence of data breaches and cyber-attacks, securing intellectual properties and customer's personally identifiable information has become increasingly challenging in business, government, and academia. It is commonly recognized that a key factor for having a cyber-secured environment and operations is well-trained employees with good cyber hygiene. A small human error may lead to a disastrous cyber incident. The cybersecurity risk management minor is designed for students in non-computing majors who are interested in learning about cybersecurity and developing the knowledge and skills to support organizations in their efforts to protect their computing and informational resources. Students learn the basics of computing and cybersecurity and then gain knowledge and practice in cybersecurity policy and law, risk management, and business continuity plans in the event of a cybersecurity attack.

Notes about this minor:

- This minor is closed to students majoring in computing security or any combined accelerated degree (BS/MS) that includes the BS in cybersecurity
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
CSEC-140	Introduction to Cybersecurity
ISCH-110	Principles of Computing
PUBL-363	Cyber Security Policy and Law
Electives	
Choose two of the following:	
CSEC-362	Cryptography and Authentication
CSEC-468	Risk Management for Information Security
CSEC-477	Disaster Recovery Planning and Business Continuity

Dance

Program overview

The dance minor provides you with an overview of dance by exploring its contemporary applications through experiential and academic methods. You will have the opportunity to actively experience, analyze, and participate in dance as an art form, as an exploration of movement, and as a means of creative and personal expression. The minor requires you to take a an introductory course on world dance and culture, which provides cultural perspectives and examines dance traditions and movement through historical, critical, artistic, and socio-cultural contexts.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
PRFN-340	World Dance & Culture
Group A Electives	
Choose one of the following:	
PRFN-240	Dance History
PRFN-243	Dance: Jazz
PRFN-244	Dance: Hip Hop
PRFN-246	Dance: Modern
PRFN-247	Dance: Ballet
PRFN-250	Choreography: Designing Movement
Group B Electives	
Choose one of the following:	
PRFN-341	Exploring Technology in Dance
PRFN-342	African Dance
PRFN-345	Movement Analysis and Visual Expression
PRFN-350	Choreography for Performance
Group C Electives*	
Choose two of the following:	
PRFN-218	Theatre Practicum
PRFN-219	Seminar in Performing Arts

*Group C Electives also include the listed electives from Group A and Group B.

Database Design and Development

Dave Patric, Minor Advisor
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Program overview

The minor is a cohesive set of courses that elevates students from a foundational level to advanced knowledge of database systems and the database development process. Students learn the basics of data modeling, the relational model, normalization, and Structured Query Language (SQL). Students also learn the skills needed to effectively capture requirements, compose data models that accurately reflect those requirements, develop programs that establish lines of communication with back-end databases, build and manage large databases, and learn methods for designing and developing data warehouses.

Notes about this minor:

- This minor is closed to students majoring in computing and information technologies or web and mobile computing.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
ISTE-330	Database Connectivity and Access
ISTE-430	Information Requirements Modeling
ISTE-436	Database Management and Access
Plus one of the following:	
CSCI-320	Principles of Data Management
ISTE-230	Introduction to Database and Data Modeling*
Plus one of the following:	
ISTE-432	Database Application Development
ISTE-434	Data Warehousing
ISTE-438	Contemporary Databases

* Introduction of Database and Data Modeling (ISTE-230) will be waived with completion of Principles of Data Management (CSCI-320).

Deaf Leadership

Program overview

The deaf leadership minor provides you with an opportunity to explore aspects of deaf community leadership with special emphasis on ethics, rhetoric, social media communication, intersectionality, current national and international trends, and accessible technology.

Notes about this minor:

- This minor is closed to students majoring in community development and inclusive leadership.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
LEAD-102	Inclusive Leadership
LEAD-103	Introduction to Intersectionality
Electives	
Choose three of the following:	
LEAD-200	Dimensions of Ethical Community Leadership
LEAD-300	Rhetoric of Leadership
LEAD-301	Social Media Communication and Leadership
LEAD-303	Literatures of Intersectionality
LEAD-305	International Deaf Leadership and Community Development
LEAD-306	Leadership in the Deaf Community
LEAD-307	Leadership and Accessible Technology
LEAD-308	Current Trends in Community Development and Leadership

Digital Business

Matthew Cornwell, Minor Advisor
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Program overview

Digital business represents the impact of new technologies on business practice, products, and services. Today, social computing and mobile devices are dramatically changing the behaviors and characteristics that lead individuals and organizations to success. Through this minor students enhance their major with a focus on these new technologies and their application in business.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
MGIS-360	Building a Web Business
Electives	
Choose four of the following:	
FINC-559	Financing New Ventures
MGIS-320	Database Management Systems
MKTG-230	Principles of Marketing
MKTG-320	Digital Marketing
MKTG-365	Marketing Analytics
MKTG-410	Search Engine Marketing and Analytics
MKTG-430	Social Media Marketing

Digital Literatures and Comparative Media

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The courses in the digital literatures and comparative media minor challenge students to think about how the digital in new comparative media affects the way we read, study, and understand literature: What happens to literature and the literary in an age of digital technology and new forms of media? Courses examine a varied collection of print genres and electronic literature in order to understand the current state of this new literary field and its relation to traditional concepts of literary study. The minor provides an entry point into investigating particular aspects of the general category of the digital and its comparative relation to the literary.

Notes about this minor:

- This minor is closed to students majoring in English who have chosen a concentration in literature and media.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
ENGL-215	Text & Code
Electives	
Choose four of the following	
ENGL-275	Storytelling: [Genre/Theme]
ENGL-315	Digital Literature
ENGL-373	Media Adaptation
ENGL-374	Games and Literature
ENGL-375	Storytelling Across Media
ENGL-376	Experimental Writing*
ENGL-386	World Building Workshop*
ENGL-389	Digital Creative Writing Workshop*
ENGL-414	Women and Gender in Literature and Media
ENGL-419	Literature and Technology
ENGL-422	Maps, Spaces and Places
ENGL-450	Free & Open Source Culture

* At most only one of the creative writing workshops (ENGL-376, ENGL-386, ENGL-389) may be used toward the minor.

Diversity, Inclusion, and Dialogue

Program overview

In the diversity, inclusion, and dialogue minor you will study the social construct of diverse communities through examination of experiences of inequity, discrimination, oppression, and intersectionality. You will learn constructive dialogue techniques for use across a range of communities, with the goal of understanding diverse populations and their experiences.

Notes about this minor:

- This minor is closed to students majoring in community development and inclusive leadership.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
LEAD-200	Dimensions of Ethical Community Leadership
LEAD-203	Foundations of Dialogue: Black Deaf Experiences
Electives	
Choose three of the following:	
LEAD-303	Literatures of Intersectionality
LEAD-304	Conflict Resolution: Negotiation and Mediation
LEAD-309	Dialogue: Race and Ethnicity
LEAD-310	Dialogue: Gender
LEAD-311	Dialogue: Deaf, DeafBlind, DeafDisabled, Hard-of-Hearing
LEAD-312	Dialogue: LGBTQIA
LEAD-313	Dialogue: Social Class

Economics

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

An economics minor provides a systematic analysis of economic issues through the study of the allocation of scarce resources into production and the distribution of production among the members of society.

Notes about this minor:

- This minor is closed to students majoring in economics.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisite	
Choose one of the following:	
ECON-101	Principles of Microeconomics
ECON-101H	Honors Microeconomics
Required Course	
ECON-201	Principles of Macroeconomics
Electives	
Theory and Policy	
Choose two or three of the following:	
ECON-401	Intermediate Microeconomic Theory
ECON-402	Intermediate Macroeconomic Theory
ECON-405	International Trade and Finance
ECON-406	Global Economic Issues
ECON-407	Industrial Organization
ECON-421	Natural Resource Economics
ECON-422	Benefit-Cost Analysis
ECON-430	Managerial Economics
ECON-431	Monetary Analysis and Policy
ECON-441	Labor Economics
ECON-445	History of Economic Thought
ECON-448	Development Economics
ECON-450	Health Care Economics
ECON-452	Economics of Native America
ECON-453	Behavioral & Experimental Economics
ECON-520	Environmental Economics
Quantitative	
Choose one or two of the following:	
ECON-401	Intermediate Microeconomic Theory
ECON-403	Econometrics I
ECON-404	Mathematical Methods: Economics
ECON-410	Game Theory with Economic Applications
ECON-411	Computational Economics
ECON-433	Financial Economics

Electrical Engineering

Gill Tsouri, Minor Advisor
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Program overview

Electrical engineering encompasses disciplines such as electronics, communication, control, digital systems, and signal/image processing. An electrical engineering minor provides a foundation to explore specialized material in electrical engineering, and provides students from other engineering or non-engineering disciplines an introduction to the wide-ranging content of the electrical engineering major.

Notes about this minor:

- The minor is closed to students majoring in computer engineering technology, electrical engineering, or electrical engineering technology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites*	
MATH-182	Calculus II
PHYS-212	University Physics II
Required Courses	
EEEE-281	Circuits I
EEEE-282	Circuits II
Electives	
Choose three of the following:	
EEEE-120	Digital Systems I
EEEE-220	Digital Systems II
EEEE-353	Linear Systems
EEEE-374	EM Fields and Transmission Lines
EEEE-380	Digital Electronics
EEEE-414	Classical Control
EEEE-420	Embedded Systems Design
EEEE-480	Analog Electronics
EEEE-483	Mechatronics
EEEE-484	Communication Systems

* Additional prerequisites may be required based on the choice of electrical engineering electives.

Engineering Management

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Program overview

The minor in engineering management integrates technological and managerial expertise while focusing on the management of these areas. Engineering management is concerned with understanding the technology involved in an engineering project and the management process through which the technology is applied.

Notes about this minor:

- This minor is closed to students majoring in industrial engineering.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisites	
MATH-233	Linear Systems and Differential Equations
Plus one of the following:	
STAT-257	Statistical Inference
STAT-205	Applied Statistics
ISEE-325	Engineering Statistics and Design of Experiments
Required Courses	
ACCT-500	Cost Management in Technical Organizations
ISEE-345	Engineering Economy
ISEE-350	Engineering Management
Electives	
Choose two of the following:	
ISEE-301	Operations Research
ISEE-323	Systems and Facilities Planning
ISEE-420	Production Planning/Scheduling
ISEE-510	Systems Simulation
ISEE-560	Applied Statistical Quality Control
ISEE-582	Lean Six Sigma Fundamentals

Entrepreneurship

Matthew Cornwell, Minor Advisor
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Program overview

The entrepreneurship minor allows students to learn business skills that can be applied to any professional field. Students gain insight into the customer requirements and financial implications involved in taking a product or service from idea to implementation.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
MGMT-350	Entrepreneurship
Choose one of the following:	
MGMT-470	Applied Entrepreneurship and Commercialization
MGMT-550	Real World Business Solutions
Electives	
Choose three of the following:	
ACCT-110	Financial Accounting
ACCT-210	Management Accounting
ACCT-500	Cost Management in Technical Organizations
FINC-559	Financing New Ventures
MGMT-215	Organizational Behavior
MGMT-330	Design Thinking and Concept Development
MKTG-230	Principles Of Marketing
MKTG-320	Digital Marketing

Environmental Science

Karl Korfmacher, Minor Advisor
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Program overview

The environmental science minor introduces students to the complexities of environmental issues and concepts, and provides them with opportunities to further investigate many of these issues through advanced course work. Central to this minor are the development of field, analytical, and problem solving skills and an understanding of the multiple perspectives often embedded in environmental issues. Students interested in becoming citizen scientists, or those pursuing employment or an advanced degree with an environmental focus, will find this minor beneficial.

After completing the required courses, students choose one of the following tracks: built environment/climate change, ecology, environmental microbiology, or GIS/remote sensing.

Notes about this minor:

- This minor is closed to students majoring in environmental science.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
ENVS-101	Concepts of Environmental Science
ENVS-111	Soil Science
Built Environment/Climate Change Track	
Choose three of the following:	
BIOL-111	Science in the Garden
BIOL-240	General Ecology
ENVS-301	Environmental Science Field Skills
ENVS-305	Urban Ecology
ENVS-531	Climate Change: Science Technology & Policy
Ecology Track	
Required Course	
BIOL-240	General Ecology
Choose two of the following	
BIOL-205	Animal Behavior
BIOL-211	Invertebrate Zoology
BIOL-212	Vertebrate Zoology
BIOL-218	Biology of Plants
BIOL-220	Biology of Fungi and Insects
BIOL-265	Evolutionary Biology
BIOL-311	Introduction to Microbiology
BIOL-371	Freshwater Ecology
BIOL-385	Seneca Park Zoo Internship
BIOL-444	Ornithology
BIOL-414	Animal Nutrition
BIOL-471	Environmental Microbiology
BIOL-573	Marine Biology
BIOL-575	Conservation Biology
ENVS-301	Environmental Science Field Skills
ENVS-305	Urban Ecology
ENVS-311	Wetlands
ENVS-531	Climate Change: Science Technology & Policy
GIS/Remote Sensing Track	
Required Course	
ENVS-250	Applications of Geographic Information Systems
Choose two of the following	
ENVS-540	Ecological Models in Geographic Information Systems
ENVS-550	Hydrologic Applications of Geographic Information Systems
IMGS-431	Environmental Applications of Remote Sensing
IMGS-532	Advanced Environmental Applications of Remote Sensing

Environmental Studies

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

With an emphasis on sustainability and holistic thinking, the environmental studies minor provides students with opportunities for the in-depth analysis of global and regional environmental issues, their causes, and their potential solutions. In particular, a required 500-level seminar serves as a capstone experience, helping students to integrate knowledge from several disciplinary perspectives, including socio-cultural, historical, political, economic, ethical, scientific, and/or technological factors. Having completed the minor, students will possess a high level of environmental literacy, an important component of many professional fields within the sciences, engineering, law, journalism, and public affairs.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Electives	
*Choose five of the following:**	
ANTH-360	Humans and Their Environment
ECON-421	Natural Resource Economics
ECON-520	Environmental Economics
HIST-345	Environmental Disasters
PHIL-308	Environmental Philosophy
PUBL-530	Energy Policy
STSO-120	Introduction to Environmental Studies
STSO-220	Environment and Society
STSO-230	Foundations of Engagement and Community Transformation
STSO-321	Face of the Land
STSO-325	History of the Environmental Sciences
STSO-326	History of Ecology and Environmentalism
STSO-330	Energy and the Environment
STSO-335	Industry, Environment, and Community in Rochester
STSO-342	Gender, Science, and Technology
STSO-421	Environmental Policy
STSO-422	Great Lakes
STSO-425	Nature and Quantification
STSO-488	Topics in Environmental Studies
STSO-510	Interdisciplinary Capstone Seminar
STSO-521	Biodiversity and Society
STSO-550	Sustainable Communities
STSO-599	Science, Technology, Society Independent Study

* At least one elective must be taken at the 300-level or higher.
** Three courses must be STSO courses.

Ethics

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The ethics minor provides students with the ability to recognize ethical issues and to think critically to resolve them, both generally and within their chosen discipline. Students also learn how ethical problems can result from complex social structures and how changing structural features may avoid ethical problems. Three courses in philosophy are required plus two electives from the approved list, at least one of which must be outside philosophy. Only one 100-level course may be counted as part of the minor.

Notes about this minor:

- This minor is closed to students majoring in philosophy.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements.

Curriculum

COURSE	
Required Courses	
PHIL-202	Foundations of Moral Philosophy
PHIL-415	Ethical Theory
Electives*	
Choose three of the following:	
BIOL-255	Genetics and Society
CRIM-299	Crime, Justice, and Ethics
DHSS-103	Ethics in the Digital Era
ECON-102	Economics, Ethics, and Society
ENGL-314	Ethics in the Graphic Memoir
ISEE-684	Engineering and the Developing World
ISTE-110	FYW: Ethics in Computing
MEDS-360	Placebo, Suggestion, Research and Health
MGMT-340	Business Ethics and Corporate Social Responsibility
NSSA-221	Systems Administration I
PHIL-102	Introduction to Moral Issues
PHIL-304	Philosophy of Law
PHIL-305	Philosophy of Peace
PHIL-306	Professional Ethics
PHIL-308	Environmental Philosophy
PHIL-309	Feminist Theory
PHIL-311	East Asian Philosophy
PHIL-315	Responsible Knowing
PHIL-316	Bioethics and Society
PHIL-403	Social and Political Philosophy
PHIL-407	Philosophy of Action
PHIL-409	Existentialism
PHIL-449	Topics in Philosophy†
PUBL-201	Ethics, Values & Public Policy
SOCI-225	Social Inequality

* Only one 100-level course may be counted as part of the minor.
† PHIL-449 may be used when the topic includes ethical issues.

Exercise Science

William Brewer, Minor Advisor
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Program overview

The exercise science minor includes foundation sequences in anatomy and physiology upon which the basic principles of exercise physiology, fitness assessment, and the preparation of fitness programs are built. The minor prepares students to sit for professional certification examinations for work in the fitness industry, provides understanding of sports physiology for those interested in sports equipment design and technology, and complements and enhances personal fitness.

Notes about this minor:

- This minor is closed to students majoring in exercise science or biomedical sciences (who have declared a concentration in exercise science).
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five of the following:	
EXSC-150	Introduction to Exercise Science
EXSC-205	Sports Physiology & Life Fitness
EXSC-206	Fitness Prescription
EXSC-207	Exercise for Special Populations
EXSC-210	Human Motor Behavior
EXSC-270	Group Exercise
EXSC-280	Strength Training for Performance
EXSC-320	Coaching Healthy Behavior
EXSC-360	Worksite Health Promotion
EXSC-370	Senior Adult Fitness
EXSC-380	Sports Psychology
EXSC-410	Kinesiology
EXSC-420	Biomechanics
EXSC-430	Theory of Athletic Injuries
EXSC-440	Cardiac Rehabilitation
EXSC-480	Training High Performance Athletes
EXSC-550	Exercise Physiology
EXSC-589	Topics in Exercise Science
MEDS-250	Human Anatomy and Physiology I
MEDS-251	Human Anatomy and Physiology II
NUTR-300	Sports Nutrition

Film Studies

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Program overview

Film studies explores the role of cinema in our contemporary global culture. Using methodologies and perspectives from a variety of disciplines, such as English, anthropology, philosophy, fine arts/visual culture, political science, history, and modern languages, the film studies minor investigates cinema's mass appeal as a form of entertainment, but also the power it wields as a disseminator of ideas, history, values, aesthetics, behavior, and cultural norms.

Notes about this minor:

- This minor is closed to students majoring in film and animation.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five of the following:	
ANTH-265	Native Americans in Film
ANTH-430	Visual Anthropology
ENGL-410	Film Studies
FNRT-200	Anime
FNRT-372	American Film of the Studio Era
HIST-275	Screening the Trenches: The History of WWI Through Film
HIST-450	Japan in History, Fiction and Film
MLCH-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
MLFR-151	Film, Comics, and French Culture
MLFR-351	French Films and Hollywood
MLFR-352	The French Heritage in Films
MLIT-351	Italian Cinema: Neorealism to the New Millennium
MLSP-352	Caribbean Cinema
PHIL-313	Philosophy of Film
POLS-490	Politics Through Film
VISL-100	Introduction to Visual Arts
VISL-120	Introduction to Film
VISL-140	Introduction to Visual Culture
VISL-320	Contemporary Cinema: Neorealism to the New Millennium
VISL-373	American Film Since the Sixties
VISL-440	Deaf Art & Cinema
WGST-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory

Finance

Matthew Cornwell, Minor Advisor
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Program overview

The finance minor helps students create value in any type of business organization by broadening student's learning experiences and professional opportunities by focusing on corporate finance and investment topics in more depth.

Notes about this minor:

- This minor is closed to students majoring in business administration: finance.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
ACCT-110	Financial Accounting
FINC-220	Financial Management
Electives	
Choose three of the following:	
FINC-120	Personal Financial Management
FINC-352	Financial Management II
FINC-361	Financial Institutions and Markets
FINC-362	Intermediate Investments
FINC-420	International Finance
FINC-425	Stock Market Algorithmic Trading
FINC-430	Advanced Corporate Financial Planning
FINC-460	Financial Analysis and Modeling
FINC-470	Introduction to Options and Futures
FINC-489	Seminar in Finance
FINC-559	Financing New Ventures
FINC-580	Financial Analytics

Flexible Packaging

Stefanie Soroka, Minor Advisor
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Program overview

The flexible packaging minor addresses flexible containment systems, one of the fastest growing segments of the packaging materials industry. The manufacturing and use of flexible containment systems requires specific expertise and knowledge of appropriate technology for implementation. Flexible pouches and containment systems are considered more sustainable for replacing glass bottles and jars, plastic bottles, and metal cans. They use materials more efficiently and reduce the weight and costs associated with physical distribution activities.

Students learn about the sustainability performance of flexible packaging by studying product lifecycle from a societal, environmental, and economic impact as they design and manufacture more environmentally friendly flexible container systems. The minor enhances employment opportunities in industries such as consumer goods, health care, and the various food industries. Students with interests in engineering, engineering technology, printing, manufacturing and safety, product marketing, industrial design, logistics, and other related fields can benefit from the minor.

Notes about this minor:

- This minor is closed to students majoring in packaging science.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
MAAT-206	Print Production
MAAT-558	Package Printing
PACK-560	Converting and Flexible Packaging
Electives	
Choose two of the following:	
MAAT-368	Gravure and Flexography
MAAT-376	Lithographic Process
MAAT-541	Digital Print Processes
MAAT-544	Color Management Systems
PACK-211	Packaging Metals & Plastics
PACK-430	Packaging Regulations
PACK-530	Packaging Sustainability and the Environment
PACK-550	Packaging Machinery

Forensic Clinical Psychology

Program overview

A minor in forensic clinical psychology is for students who have an interest in clinical, applied, and/or research within the area of clinical psychology and law. It is an interdisciplinary field encompassing the role of mental health (psychology, psychiatry, social work) within the context of the law and public policy. Forensic clinical psychology offers a wide variety of career opportunities. The objective of this minor is to provide you with a background in areas commonly needed to support forensic clinical psychology roles, as well as help you develop critical thinking skills in analyzing psychological theory, research, and practice within legal settings, apply an understanding of complex social, moral, and psychological influences of human behavior within legal contexts, and explain professional codes of behavior and understand ethical values and constraints affecting psycho-legal practice.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSES	
Required Courses	
Choose three of the following:	
BHNS-311	Diagnosing the Criminal Mind
BHNS-411	Researching the Criminal Mind
BHNS-426	Addiction Pharmacology
PSYC-222	Biopsychology
Electives	
Choose two of the following:	
BHNS-365	Neurological Disease and Behavior
BHNS-465	Assessment and Differential Diagnosis in Forensic Psychology
BHNS-466	Forensic Clinical Case Studies
BHNS-467	Clinical Neuroscience I
BHNS-565	Integration of Behavioral Health Scholarship
BHNS-566	Neurobiological Basis of Therapy
BHNS-567	Clinical Neuroscience II
PSYC-313	Forensic Psychology
CRIM-215	Law and Society
CRIM-250	Domestic Violence
GLPH-371	Global Mental Health

Free and Open Source Software and Free Culture

Stephen Jacobs, Minor Advisor
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Program overview

Free and open source software is released with licenses that allow it to be redistributed freely for others to use, copy, and/or modify within certain restrictions and conditions. Free culture refers to writing, art, music, and other creative materials released with rights for reuse and/or redistribution that are more flexible than those of the traditional marketplace. Both are often created and/or distributed by collaborative teams with members around the world. The minor in free and open source software and free culture is intended for students who want to develop a deep understanding of the processes, practices, technologies, financial, legal, and societal impacts of these movements. The minor includes a set of computing and liberal arts courses that explore these aspects through research, analysis, and participation in these communities via the creation of digital cultural artifacts and team-driven software projects. Students complete three required courses, one constrained elective course, and one elective course.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
ENGL-450	Free & Open Source Culture
IGME-582	Humanitarian Free & Open Source Software Development
IGME-585	Project in FOSS Development
Elective Course	
Choose two of the following:	
COMM-303	Small Group Communication
COMM-304	Intercultural Communication
ENGL-215	Text & Code
ENGL-351	Language Technology
ENGL-581	Natural Language Processing I
IGME-583	Legal and Business Aspects of FOSS
ISCH-201	Computing, Culture and Society
STSO-201	Science and Technology Policy
STSO-230	Foundations of Engagement and Community Transformation
STSO-240	Social Consequences of Technology
STSO-246	History of Women in Science and Engineering

Furniture Design

Program overview

The furniture design minor enables you to develop craftsmanship and fine woodworking skills while also engaging in aesthetic and creative problem solving associated with furniture design. You will investigate an individual design language and personal aesthetic through the creation of various pieces of furniture.

Notes about this minor:

- This minor is closed to students majoring in the studio arts BFA who have chosen the furniture design option.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
CWFD-124orFDTN-131	Woodworking / Furniture Studio Surveyor3D Design I
CWFD-213	Introduction to Woodworking and Furniture Design
Electives	
Choose three of the following:	
CWFD-506	Furniture Design: Table Design and Construction
CWFD-507	Furniture Design: Bench Design and Construction
CWFD-511	Furniture Design: Wood Carving
CWFD-512	Furniture Design: Box and Cabinet Design and Construction
CWFD-530	Furniture Design 3 Credit Elective

Game Design and Development

Theresa Gorecki, Minor Advisor
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Program overview

The game design and development minor is intended for students studying in a technical field who want to combine their knowledge and skill in software development with the media-centric approach to application design that is exemplified in the professional games and simulation industries. The minor defines a series of courses that build upon students' existing knowledge in computing, physics, and mathematics to explore the design principles of games and interactive worlds through the creation of prototypes and software projects.

Notes about this minor:

- This minor is closed to students majoring in game design and development.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
IGME-202	Interactive Media Development
IGME-209	Data Structures & Algorithms for Games & Simulations I
IGME-220	Game Design & Development I
IGME-309	Data Structures & Algorithms for Games & Simulations II
IGME-320	Game Design & Development II

Game Design

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Program overview

The game design minor is intended for students outside of technical computing majors who want to explore the process and principles of game design and the associated theories of interactive media. The minor provides an introductory experience to media-centric software development that enables students to prototype and test their own designs.

Notes about this minor:

- This minor is closed to students majoring in computer engineering, computer science, computing and information technologies, cybersecurity, game design and development, human-centered computing, new media interactive development, software engineering, and web and mobile computing.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
IGME-101	New Media Interactive Design and Algorithmic Problem Solving I
IGME-102	New Media Interactive Design and Algorithmic Problem Solving II
IGME-119	2D Animation and Asset Production
IGME-220	Game Design & Development I
IGME-320	Game Design & Development II

Gender Equity, Social Institutions, and Public Affairs

Program overview

The gender equity, social institutions, and public affairs minor is an interdisciplinary course of study that equips you with the ability to view the social domain of public affairs, institutions, practices, and policies through a gendered lens and prepares you for future potential roles as advocates and leaders in the struggle toward gender equity and social justice.

This minor explores the influence of gender in its intersection with sexuality, ethnicity, nationality, race, class, and disability within the social, institutional, and policy environment. You will learn to analyze domains of power within the economic, political, and social structures (including the family); identify gender inequities and inequalities; evaluate and implement theories, methods, and practices for challenging gendered discrimination; and learn leadership and communicative strategies to increase inclusiveness and social justice, and to improve lives and well-being at the individual and collective levels.

As gender is such a pervasive dimension of public life and policies, the minor is beneficial to students in all professions and especially those interested in promoting gender justice in the fields of sustainability and development, industry and transportation, economics and finances, human rights, the legal and judicial systems, health, international peace and security, and urban, environmental, and energy policies.

Notes about this minor:

- This minor is closed to students majoring in women's, gender, and sexuality studies and those pursuing a minor in women's and gender studies.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Group A	
Choose one of the following:	
WGST-200	Foundations Of Women And Gender Studies
WGST-205	Feminist Practices of Inquiry
WGST-210	Introduction to LGBTQ+ Studies
Group B	
Choose three of the following:	
ANTH-246/SOCI-146	Gender and Health
WGST-230	Men, Males, and Masculinities
WGST-235	Women, Work, and Culture
WGST-245	Prostitution and Vice
WGST-250	Domestic Violence
WGST-255	Seminar on Sexual Violence
WGST-265	Women and Crime
WGST-290	American Women's and Gender History
WGST-318	Philosophies of Love,Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-335	Women and the Deaf Community
WGST-361	Queering Gender
WGST-399	Collaborative Learning Seminar
WGST-449	Topics in Women's and Gender Studies
WGST-451	Economics of Women and the Family
WGST-459	Topics in LGBTQ+ Studies*
WGST-481	Women in Politics
Group C	
Choose one of the following:	
COMM-291	Communication for Social Change
LEAD-102	Inclusive Leadership
NDLS-200	Introduction to Group Advocacy
PUBL-101	Foundations of Public Policy
STSO-230	Foundations of Engagement and Community Transformation
WGST-295	Global Craftivism, Gender, and Handwork
WGST-300	Feminist Leadership, Gender Equity and Empowerment
WGST-305	Feminist Activism for Gender Justice

* Course may be used in consultation with academic advisor when the topic includes issues related to public institutions and policy.

Gender, Art, and Media

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

In the gender, art, and media minor students explore how gender issues and identities, in their intersections with culture, race, ethnicity, nationality, social class, age, and (dis)abilities, are represented and portrayed in various artistic, literary, and media forms. By engaging with cultural texts and productions from both historical and contemporary perspectives, the minor introduces students to critical analysis and knowledge-building methods drawn from fields such as women's and gender studies, feminist theories, critical race studies, queer studies, social justice work, and activism. The minor teaches students to analyze gendered images as they appear in arts and media, recognize power inequalities and stereotypes in gender representations, and acquire the conceptual skills to critique and improve current conditions of artistic, literary, and media production and consumption in view of increased gender equity and fairness. The minor complements any course of studies in a number of art and media-related fields such as art and literary criticism, art curation and exhibition, journalism and photojournalism, media studies, filmmaking, literature, photography, advertising and marketing, public relations, social services, and more.

Notes about this minor:

- This minor is closed to students majoring in women's, gender, and sexuality studies and who have already declared a minor in women and gender studies.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course*	
Gender Theory Courses	
Choose one of the following:	
WGST-200	Foundations Of Women And Gender Studies
WGST-205	Feminist Practices of Inquiry
WGST-210	Introduction to LBGTQ+ Studies
WGST-309/PHIL-309	Feminist Theory
Art Courses	
Choose one of the following:	
ARTH-577	Displaying Gender
GRDE-322	Women Pioneers in Design
WGST-206	Queer Looks
WGST-295	Global Craftivism, Gender and Handwork
WGST-352	Globalization and Gender Through Chinese Cinema: From Kungfu to World Factory
WGST-375	Women/Gender/Art
WGST-383	Traumatic Images
WGST-384	Art of Dying
WGST-388	Gender and Contemporary Art
WGST-392	Queer and Transgender Creative Writing Workshop
WGST-414	Women and Gender in Literature and Media
Media courses	
Choose one of the following:	
ARTH-577	Displaying Gender
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
WGST-206	Queer Looks
WGST-330	Performing Identity in Popular Media
WGST-352	Globalization and Gender Through Chinese Cinema: From Kungfu to World Factory
WGST-357	Communication, Gender, and Media
WGST-383	Traumatic Images
WGST-388	Gender and Contemporary Art
Electives	
Choose two of the following:	
ANTH-325	Bodies and Culture
ARTH-577	Displaying Gender
GRDE-322	Women Pioneers in Design
SOCI-355	CyberActivism: Diversity, Sex, & the Internet
WGST-200	Foundations Of Women And Gender Studies
WGST-205	Feminist Practices of Inquiry
WGST-206	Queer Looks
WGST-210	Introduction to LBGTQ+ Studies
WGST-309	Feminist Theory
WGST-318	Philosophies of Love,Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-351	Gender and Sexuality in Hispanic Studies
WGST-352	Globalization and Gender Through Chinese Culture: From Kungfu to World Factory
WGST-357	Communication, Gender, and Media
WGST-375	Women/Gender/Art
WGST-383	Traumatic Images
WGST-384	Art of Dying
WGST-388	Gender and Contemporary Art
WGST-392	Queer and Transgender Creative Writing Workshop
WGST-399	Collaborative Learning Seminar in WGSS
WGST-414	Women and Gender in Literature and Media

* At most, two non-WGST courses may be counted toward the GAAM Minor.

Geographic Information Systems

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Program overview

The geographic information systems (GIS) minor provides students with experience in the concepts, technology, and applications related to computer-based mapping, spatial databases, and geographic analysis and problem solving. The minor features two tracks: a GIS development track for students interested in GIS software development, and a GIS analysis track for students interested in utilizing GIS as a strong methodological base within their major of study. Required courses provide core GIS foundations applicable to a variety of multidisciplinary elective courses students can choose from to match their research, post-graduate, or career interests.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
IGME-382	Maps, Mapping and Geospatial Technologies
IGME-384	Introduction to Geographic Information Systems
Electives	
Choose three of the following:	
CVET-160	Surveying
CVET-161	Surveying Lab
IMGS-431	Environmental Applications of Remote Sensing
IGME-386	Spatial Algorithms and Problem Solving
IGME-484	Geographic Visualization
ISTE-230	Introduction to Database and Data Modeling
ENGL-422	Maps, Spaces and Places

Glass

Nate Rohman, Minor Advisor
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Program overview

The glass minor provides students with an opportunity to diversify their voice and vision through an extensive experience in all glass working processes supported by the glass studios in the College of Art and Design. Aside from developing a breadth of technical understanding in working with glass, the minor culminates in a portfolio of work demonstrating a diversified approach to glass making and glass thinking. Completing the glass minor will further amplify students' creative potential and supplement each student's overall education at RIT.

Notes about this minor:

- This minor is closed to students majoring in studio arts BFA who have chosen the glass option.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
CGLS-124	Studio Glass Survey
Electives	
Choose four of the following:	
CGLS-206	Molten Glass Practice*
CGLS-211	Mold and Kiln Glass Practice*
CGLS-307	Hot Phenomena Glass Practice
CGLS-312	Kinetic Glass Practice*
CGLS-530	Glass Processes

* CGLS-206, CGLS-211, CGLS-307, and CGLS-312 are repeatable for credit, and can be used towards fulfilling the Minor.

Global Public Health

Program overview

The global public health minor enhances your understanding of the important concepts of public health and its focus on prevention and population-based approaches to enhancing health for all people. An overriding goal of the minor will be to ensure that you understand the various determinants of health and how health care professionals can strive to ensure all people, everywhere, have what they need to reach their full potential. You will learn how to apply the knowledge obtained in this minor to local, regional, national, and global health concerns.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
GLPH-101	Introduction to Public Health
MEDS-355	Introduction to Global Health
Electives	
Choose three of the following:	
ANTH-295	Global Public Health
ANTH-341	Global Addictions
COMM-344	Health Communication
DCHP-301	Spirituality, Religion & Medicine
ESHS-320	Principles of Safety
ESHS-360	Sustainable World Water Supply
ESHS-511	Environmental & Occupational Health
ESHS-512	Environmental & Occupational Health Lab
GLPH-105	Disease Awareness and Prevention
GLPH-371	Global Mental Health
GLPH-455	Global Public Health & Healthcare Delivery with International Field Experience
HLTH-320	Legal Aspects of Health Care
HLTH-325	Health Care Leadership
HLTH-328	Finance for Health Care Professionals
HLTH-330	Health Planning and Program Development
HLTH-508	Integrated Health Systems & Population Health
HLTH-510	Global Health Systems
HLTH-511	Emergency Management in Health Care
HLTH-512	Cultural Competency in Global Health
HLTH-521	Leadership in Global Public Health
MEDS-201	Language of Medicine
MEDS-402	Biomedical Ethics (WI)
MEDS-430	Epidemiology
NUTR-215	Foundations of Nutrition Sciences
NUTR-560	Health and Nutrition Research Foundations (WI)
NUTR-580	Global Food and Nutrition Perspectives
PSYC-241	Health Psychology
PUBL-101	Foundations of Public Policy
SOCI-295	Global Public Health
STSO-120	Introduction to Environmental Studies

Globalization

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The impact of global change is dramatic and far-reaching, altering the dynamics of everyday life on a planetary scale. The minor in globalization provides students with the opportunity to think creatively about a range of globalizing processes, theories, and practices (in cultural, political, social, biomedical, economic, and artistic contexts). Courses investigate issues pertinent to the phenomenon of globalization, including cultural exchange; multicultural communities; global governance; information transfer; and social, environmental, health, and labor issues. Accelerated by communication technologies, globalization redefines how individuals and communities experience and view the world.

Notes about this minor:

- This minor is closed to students majoring in international and global studies.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
Choose One of the following:	
INGS-101	Global Studies
ANTH-210	Culture and Globalization
Electives	
Choose four of the following:	
ANTH-210	Culture and Globalization
ANTH-220	Language and Culture
ANTH-235	Immigration to the U.S.
ANTH-245	Ritual and Performance (WI)
ANTH-246	Gender and Health (WI)
ANTH-270	Cuisine, Culture and Power
ANTH-295	Global Public Health (WI)
ANTH-325	Bodies and Culture (WI)
ANTH-328	Heritage and Tourism
ANTH-341	Global Addictions (WI)
ANTH-345	Genocide and Transitional Justice
ANTH-360	Humans and Their Environment
ANTH-410	Global Cities (WI)
ANTH-425	Global Sexualities (WI)
ANTH-430	Visual Anthropology (WI)
ECON-406	Global Economic Issues
HIST-480	Global Information Age
POLS-220	Global Political Economy
POLS-330	Human Rights in Global Perspective
SOCI-246	Gender and Health (WI)
SOCI-295	Global Public Health (WI)
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
SOCI-395	Borders:Humans, Boundaries, and Empires

Health Communication

Keri Barone, Minor Advisor
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Program overview

The health communication minor provides students with theoretical and applied knowledge about communication's role in health care delivery, doctor-patient communication, health campaigns and public health, and other areas related to the dissemination of health information. This collaborative minor is designed for students interested in health care fields or health and risk communication.

Notes about this minor:

- This minor is closed to students majoring in communication.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
COMM-344	Health Communication
COMM-305	Persuasion
Electives	
Choose three of the following:	
ANTH-246	Gender and Health
ANTH-325	Bodies and Culture
COMM-212	Public Relations
COMM-221	Public Relations Writing
COMM-223	Digital Design in Communication
COMM-322	Campaign Management and Planning
ECON-450	Health Care Economics
ENGL-345	History of Madness
GLPH-105	Disease Awareness and Prevention
MEDG-105	Disease Awareness and Prevention
MEDI-130	Computers in Medicine
MEDS-201	Language of Medicine
NUTR-215	Foundations of Nutritional Sciences
PSYC-231	Death and Dying
SOCI-246	Gender and Health

Health, Culture, and Society

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

All societies have some cultural ideas and belief systems about health and wellness. Culture shapes our understanding of bodily processes. Because of the significant influence of culture on perceptions and experiences of health and wellness, this minor thematizes the shifting cultural configurations of health in a globalizing world. Culturally grounded health and illness concepts, including notions about bodily integrity or emotional well-being, cultural models of illness causation and diagnostic practices, and the experiences, expressions, and treatments of human ailments unfold in concrete socio-cultural contexts. The courses in this minor provide an enhanced cultural understanding about health experiences in different parts of the world.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
Choose one of the following:	
SOCI-322	Health and Society
SOCI-295	Global Public Health
ANTH-295	Global Public Health
Electives	
Choose four of the following:	
ANTH-105	Health, Humans, and Technology
ANTH-244	Human Centered Design Queries: An Anthropological Approach
ANTH-245	Ritual and Performance (WI-GE)
ANTH-246	Gender and Health (WI-GE)
ANTH-250	Themes in Archaeological Research*
ANTH-270	Cuisine, Culture, and Power
ANTH-295	Global Public Health (WI-GE)
ANTH-325	Bodies and Culture (WI-GE)
ANTH-341	Global Addictions (WI-GE)
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-425	Global Sexualities
ANTH-435	The Archaeology of Death
ANTH-489	Topics in Anthropology†
COMM-344	Health Communication
CRIM-245	Prostitution and Vice
ECON-450	Health Care Economics
ENGL-330	Rhetoric of Health and Medicine
MEDS-355	Introduction to Global Health
MLSP-353	Trauma and Survival in First-Person Narrative
PHIL-316	Bioethics and Society
PSYC-231	Death and Dying
SOCI-240	Deaf Culture in America
SOCI-246	Gender and Health (WI-GE)
SOCI-295	Global Public Health
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-322	Health and Society (WI-GE)
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-361	Sociology of Numbers
SOCI-395	Borders: Humans, Boundaries, and Empires
SOCI-489	Topics in Sociology†
STSO-341	Biomedical Issues: Science and Technology
STSO-441	Cyborg Theory: (Re)thinking the Human Experience in the 21st Century
VISL-383	Traumatic Images
VISL-384	Art of Dying

* ANTH-250 may be used when topic is Hunger and Health.
† Class may be taken when topic is relevant to the minor.

History

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The history minor provides students with a foundation in the academic study of history. It serves as a complement to any professional degree, as historical study at the college level hones the skills that are important to any well-trained professional: namely, effective writing, critical analysis, engaged reading, and logical thinking. Students are free to shape the history minor to their liking, by choosing the geographic areas of historical study of most interest to them, such as American, European, or Asian, or by choosing the historical topic of most interest to them, such as transnational history, comparative history, war, business, race, or gender.

Notes about this minor:

- This immersion is closed to students majoring in history.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Electives	
*Choose five of the following:**	
HIST-101	Making History
HIST-102	Themes in US History
HIST-103	The City in History
HIST-104	Themes in European History
HIST-105	Themes in History†
HIST-125	Public History and Public Debate
HIST-140	History of the Modern Middle East
HIST-150	World History since 1500
HIST-160	History of Modern East Asia
HIST-170	Twentieth Century Europe
HIST-180	Information Revolution
HIST-190	American Women's and Gender History
HIST-191	The History of Families and Children in the U.S.
HIST-199	Survey of American Military History
HIST-201	Histories of Globalization
HIST-210	Culture and Politics in Urban Africa
HIST-221	Introduction to Public History
HIST-230	American Deaf History
HIST-231	Deaf People in Global Perspective
HIST-238	History of Disability
HIST-240	Civil War America
HIST-242	The American Revolutionary Era
HIST-245	American Slavery and Freedom
HIST-250	Origins of U.S. Foreign Relations
HIST-251	Modern U.S. Foreign Relations
HIST-252	The United States and Japan
HIST-255	History of World War II
HIST-260	History of Premodern China
HIST-261	History of Modern China
HIST-265	History of Modern Japan
HIST-266	History of Premodern Japan
HIST-270	History of Modern France
HIST-275	Screening the Trenches: The History of WWI Through Film
HIST-280	History of Modern Germany
HIST-282	Women, Gender, and Computing
HIST-290	U.S. History Since 1945
HIST-301	Great Debates in US History
HIST-302	Topics in History
HIST-310	Global Slavery and Human Trafficking
HIST-322	Monuments and Memory
HIST-323	America's National Parks
HIST-324	Oral History
HIST-325	Museums and History
HIST-326	Digital History
HIST-330	Deafness and Technology
HIST-333	Diversity in the Deaf Community
HIST-335	Women and the Deaf Community
HIST-340	Rochester Reformers: Changing the World
HIST-345	Environmental Disasters
HIST-350	Terrorism, Intelligence, and War
HIST-351	The Vietnam War
HIST-355	The Holocaust: Event, History, Memory
HIST-360	A Global History of Baseball
HIST-365	Conflict in Modern East Asia
HIST-369	Histories of Christianity
HIST-370	Global History of Religions
HIST-380	International Business History
HIST-383	Technology and Global Relations in the American Century
HIST-390	Medicine & Public Health in American History
HIST-402	Special Seminar in History
HIST-421	Hands-on History
HIST-430	Deaf Spaces
HIST-431	Theory and Methods of Deaf Geographies
HIST-439	Biography as History
HIST-450	Japan in History, Fiction, and Film
HIST-462	East-West Encounters
HIST-465	Samurai in Word and Image
HIST-470	Science, Tech, & European Imperialism: 1800-1965
HIST-480	Global Information Age

* At least two courses must be taken at the 300-level or higher.
† HIST-105 is used to transfer in courses or AP exams. While the course is repeatable, it only counts once in the minor.

Hospitality Management

Matthew Cornwell, Minor Advisor
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Program overview

Hospitality industries and related entrepreneurial businesses include those in lodging, resorts, food, entertainment, events and conventions, and tourism. The hospitality management minor provides an opportunity to learn about service–oriented businesses that are a significant portion of the economies of many countries.

Notes about this minor:

- This minor is closed to students majoring in hospitality and tourism management.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
HSPT-225	Hospitality and Tourism Management Fundamentals
HSPT-315	Lodging Operations Analytics and Management
HSPT-335	Food and Beverage Management
Electives	
Choose two of the following:	
DECS-310	Operations Management
HSPT-215	Principles of Food Production and Service
HSPT-232	Hospitality Real Estate
HSPT-336	Risk Management and HTM Law
HSPT-350	Event & Project Management
HSPT-375	Customer Experience Management
HSPT-485	Restaurant and Event Management
HSPT-495	Hospitality Project Planning and Development
INTB-225	Global Business Environment
MGMT-215	Organizational Behavior
MGMT-340	Business Ethics and Corporate Social Responsibility
MKTG-230	Principles of Marketing

Human Resource Management

Matthew Cornwell, Minor Advisor
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Program overview

The human resource management minor focuses the critical functions of a human resources department, such as hiring, training, compensation, benefits, and employment law.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
MGMT-215	Organizational Behavior
HRDE-383	Employee Benefits & Compensation
HRDE-386	Human Resources Development
HRDE-387	Human Resource Employment Law and Regulations
Choose one of following:	
BANA-255	Data Literacy, Analytics, and Decision Making
INTB-300	Cross-Cultural Management
MGMT-310	Leading Cross-Cultural & Virtual Teams
MGMT-320	Organizational Effectiveness Skills
MGMT-340	Business Ethics and Corporate Social Responsibility
MGMT-450	Negotiations and Decision-Making

Imaging Science

James Ferwerda, Minor Advisor
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Program overview

Imaging science is a highly interdisciplinary field of study that incorporates elements from mathematics, engineering, computer science, and physics to understand, design, and utilize imagery and imaging systems to study scientific phenomena. The imaging science minor is designed to allow students from various departments across RIT to study how to use imaging to enhance their primary field of study or discover how to incorporate imaging science into their major discipline to solve complex, interdisciplinary problems in imaging, imagery exploitation, and the design and evaluation of imaging systems.

Notes about this minor:

- This minor is closed to students majoring in imaging science.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisites	
MATH-181	Project-Based Calculus I (or equivalent)
MATH-182	Project-Based Calculus II (or equivalent)
PHYS-211	University Physics I
PHYS-212	University Physics II
Required Course	
SOFA-103	Introduction to Imaging and Video Systems
Electives	
Choose four of the following:*	
IMGS-221	Vision & Psychophysics
IMGS-251	Radiometry
IMGS-261	Linear and Fourier Methods for Imaging
IMGS-321	Geometric Optics
IMGS-322	Physical Optics
IMGS-341	Interactions Between Light and Matter
IMGS-351	Fundamentals of Color Science
IMGS-361	Image Processing and Computer Vision I
IMGS-362	Image Processing & Computer Vision II
IMGS-451	Imaging Detectors
IMGS-462	Multivariate Statistical Image Processing
IMGS-528	Design and Fabrication of Solid State Cameras
IMGS-539	Principles of Solid State Imaging Arrays
IMGS-542	Testing of Focal Plane Arrays
MATH-233	Linear Systems and Differential Equations
MATH-241	Linear Algebra
MATH-251	Probability and Statistics I
PHYS-213	Modern Physics I
PHYS-283	Vibrations and Waves
PHYS-320	Mathematical Methods in Physics
PHYS-365	Physical Optics

* At least one course must be completed at the 300-level or above.
† Students are required to take SOFA-103 and at least two courses in Imaging Science (IMGS).

Imaging Systems

Stephanie Solt, Minor Advisor
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Program overview

The imaging systems minor offers students an introduction to the business and technology of photographic imaging services. Courses cover digital imaging capture systems, professional practices, output technologies, color management, and imaging workflows. The minor provides the foundation students need to pursue opportunities in photo technology management, color workflows, technical support, digital imaging technology, and sales for photography and imaging manufacturers.

Notes about this minor:

- This minor is closed to students majoring in photographic sciences.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
IMSM-301	Imaging Systems
IMSM-302	Color Management Technology
Electives	
Choose three of the following:	
PHAP-361	Foundations of Image Retouching
PHAP-366	Advanced Retouching and Compositing
PHFA-562	The Fine Print Workflow
PHPS-207	Vision, Perception and Imaging
PHPS-211	Photographic Optics
PHPS-217	Media Production & Technology
PHPS-332	Digital Imaging Processing
PHPS-337	Color Measurement
PHPS-529	High Speed Photography
PHPS-539	Photographic Instrumentation
SOFA-568	Digital Color Management

Industrial Engineering

Robin Borkholder, Minor Advisor
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Program overview

A minor in industrial engineering focuses on the design, improvement, and installation of integrated systems of people, materials, equipment, and energy. Students utilize skills in statistics, ergonomics, operations research, and manufacturing.

Notes about this minor:

- This minor is closed to students majoring in industrial engineering.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisites	
MATH-233	Linear Systems and Differential Equations
Choose one of the following:	
ISEE-325	Engineering Statistics and Design of Experiments
STAT-205	Applied Statistics
STAT-257	Statistical Inference
Electives	
Choose five of the following:	
ISEE-301	Operations Research
ISEE-323	Systems and Facilities Planning
ISEE-330	Ergonomics and Human Factors
ISEE-345	Engineering Economy
ISEE-420	Production Planning/Scheduling
ISEE-510	Systems Simulation
ISEE-560	Applied Statistical Quality Control
ISEE-582	Lean Six Sigma Fundamentals

Innovation

Meg Walbaum, Minor Advisor
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Program overview

The innovation minor enables students from across all of RIT's colleges to develop the necessary skills, knowledge, and experiences to become innovators in areas of interest related to their individual academic and professional goals. The core of the minor helps students to define innovation; understand past and current trends in innovation, as well as the processes and practical considerations for innovating; and gain experience at innovating through project-based, interdisciplinary experiential learning and collaborative activities. Students customize the minor by taking innovation elective courses that explore an area of personal and/or professional interest within the boundaries of the larger minor. The minor is inter-disciplinary in its approach and fosters multi-college collaboration as it allows students to select discipline-specific courses, sourced from across the university, as their innovation elective courses.

Notes about this minor:

- This minor is closed to students majoring in the individualized program who have chosen a concentration in innovation.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
SOIS-211	Exploring Innovation
SOIS-411	The Practice of Innovation and Invention
SOIS-511	Innovation Lab
Electives	
Choose two of the following:	
ENGL-419	Literature and Technology
ENGL-450	Free & Open Source Culture
IGME-581	Innovation & Invention
MGMT-330	Design Thinking and Concept Development
SOIS-333	Wicked Problems
SOIS-441	Creative Critical Thinking and Problem Solving

International Business

Matthew Cornwell, Minor Advisor
585-475-6916, mcornwell@saunders.rit.edu

Program overview

Students who select the international business minor benefit from learning the global view of worldwide markets and the role of business in these environments.

Notes about this minor:

- This minor is closed to students majoring in global business management.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
INTB-225	Global Business Environment
INTB-315	Exporting and Global Sourcing
Electives	
Choose three of the following:	
FINC-420	International Finance
INTB-310	Regional Business Studies
INTB-550	Competing Globally
MGMT-310	Leading Cross-Cultural & Virtual Teams
MKTG-230	Principles of Marketing
MKTG-330	Global Marketing

International Relations

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The international relations minor helps students to make sense of the world through exploring ideas that have shaped it. Students explore the thoughts of various thinkers and approaches to international relations and use these perspectives to understand key themes in world politics. Important topics include democratization, globalization, terrorism, war and peace, human rights, and international law. Students reflect upon the interplay between domestic and international politics and how changes in the world order affect the internal politics of various countries.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
POLS-120	Introduction to International Relations
Electives	
*Choose four of the following:**	
POLS-205	Ethics in International Politics
POLS-210	Comparative Politics
POLS-215	Tech, Ethics & Global Politics
POLS-220	Global Political Economy
POLS-280	Artificial Intelligence and the Political Good
POLS-285	Environmental Ethics and Political Ecology
POLS-320	American Foreign Policy
POLS-325	International Law and Organizations
POLS-330	Human Rights in Global Perspective
POLS-335	Politics of Developing Countries
POLS-350	Politics of East Asia
POLS-351	Politics of China
POLS-360	International Political Thought
POLS-370	Cyberwar, Robots, & the Future of Conflict
POLS-375	Grand Strategy
POLS-390	Greece and the Political Imagination
POLS-390H	Greece and the Political Imagination
POLS-410	Evolutionary International Relations
POLS-440	War and the State
POLS-445	Terrorism and Political Violence
POLS-455	Comparative Public Policy
POLS-525	Special Topics in Political Science
POLS-541	Peacekeeping and Conflict Transformation
POLS-542	War, Diplomacy, and State-Building

* At least two courses must be taken at the 300-level or higher.

Journalism

Hinda Mandell, Minor Advisor
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Program overview

The journalism minor provides students with a foundation in the professional study and practice of journalism. Courses offer a broad perspective that includes historical, legal, and ethical issues of specific concern to journalism, as well as learning and practice writing in a journalistic style for delivery across multiple media platforms.

Notes about this minor:

- This minor is closed to students majoring in journalism.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
COMM-272	Reporting and Writing for News Media (WI)
Electives	
Choose four of the following:	
COMM-261	History of Journalism
COMM-263	Data Journalism
COMM-271	Introduction to Journalism
COMM-280	Community Journalism
COMM-291	Communication for Social Change
COMM-342	Communication Law and Ethics
COMM-370	Ethnic Press in the United States
COMM-374	Opinion Media

Language Science

Zhong Chen, Minor Advisor
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Program overview

The language science minor prepares students for the study and analysis of human language. The minor is directly applicable to students interested in computing and media, human-computer interaction, brain and cognition, language acquisition, human health, interpreting, relevant branches of engineering, and policy studies. Students can complete the minor requirements irrespective of their skills in languages other than English. Electives allow students to customize the minor to their interests and needs, with the support of a faculty adviser. The minor is an excellent complement to majors such as computer science, game design, information technology, psychology, sign language interpreting, mechanical engineering, electrical engineering, bioengineering, science, or a foreign language.

Notes about this minor:

- This immersion is closed to students majoring in English who have chosen a concentration in linguistics.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses*†	
Choose one of the following:	
ENGL-214	Introduction to Linguistics
ENGL-310	Introduction to Language Science
Plus one of the following:	
ANTH-220	Language and Culture: Introduction to Linguistic Anthropology
LING-301	Psycholinguistics
LING-302	Introduction to Syntax
LING-351	Language Technology
LING-356	Meaning in Language
Electives	
Choose three of the following:	
ANTH-220	Language and Culture: Introduction to Linguistic Anthropology
ANTH-285	American Indian Languages
ENGL-351	Language Technology
ENGL-356	Meaning in Language
ENGL-370	Evolving English Language
ENGL-482	Speech Processing I
LING-301	Psycholinguistics
LING-302	Introduction to Syntax
LING-351	Language Technology
LING-356	Meaning in Language
LING-581	Natural Language Processing I
LING-582	Natural Language Processing II
LING-584	Undergraduate Speech Processing
MLAS-351	Linguistics of American Sign Language
MLJP-351	Languages in Japanese Society
MLJP-451	Structure of the Japanese Language
MLST-449	Special Topic: Modern Language ‡
PHIL-414	Philosophy of Language
PSYC-431	Language and Thought
Beginning ASL or Modern Language 200 level course §	

* At least two of the five courses must be taken at the 300-level or higher.
† Nine credit hours must be taken outside the student's major.
‡ MLST-449 may be used for linguistics topics such as Second Language Acquisition & Bilingualism.
§ No more than one beginning ASL or modern language course may be used.

Latino/Latina/Latin American Studies

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The Latino/Latina/Latin American studies minor provides at least two full years of instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor's five courses foster cultural, or linguistic and cultural, proficiency. Part of the minor requirements may be taken abroad.

Notes about this minor:

- This minor is closed to students majoring in applied modern language and culture, who have chosen the Spanish track; and students majoring in international and global studies who have chosen Spanish or Portuguese languages or Latin America as a regional focus.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Electives	
Culture Courses	
Choose four or five of the following:	
ANTH-235	Immigration to the U.S.
ANTH-255	Regional Archaeology†
ANTH-335	Culture and Politics in Latin America
ANTH-350	The Global Economy and the Grassroots
ARTH-561	Latin American Art
ARTH-572	Art of the Americas
MLSP-351	Gender and Sexuality in Hispanic Studies
WGST-351	Gender and Sexuality in Hispanic Studies
MLSP-352	Caribbean Cinema
MLSP-353	Trauma and Survival in First-Person Narrative
MLSP-410	Spanish for Science and Technology
MLSP-415	Professional Spanish
SOCI-395	Borders: Humans, Boundaries, and Empires
Language Courses	
*Choose one of the following (if only four culture courses are chosen):**	
MLPO-201	Beginning Portuguese I
MLPO-202	Beginning Portuguese II
MLPO-301	Intermediate Portuguese I
MLPO-302	Intermediate Portuguese II
MLPO-401	Advanced Portuguese I
MLPO-402	Advanced Portuguese II
MLSP-201A	Beginning Spanish IA
MLSP-201B	Beginning Spanish IB
MLSP-202	Beginning Spanish II
MLSP-301	Intermediate Spanish I
MLSP-302	Intermediate Spanish II
MLSP-305	Spanish for Health Care
MLSP-310	Spanish Grammar Review
MLSP-315	Hispanic Culture & Civilization
MLSP-401	Advanced Spanish I
MLSP-402	Advanced Spanish II

* Students who have prior study in either language must take a placement exam through the Department of Modern Languages to determine the appropriate level language course to begin with
† Course may be used when topic focuses on Mesoamerica or Latin America.

Legal Studies

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

Recognizing the critical role that law plays in societies, the minor in legal studies provides students with courses that deepen and expand their understanding of law as practiced, especially its influence on social, political, and economic institutions.

Notes about this minor:

- Students majoring in criminal justice, philosophy, or political science can count a maximum of 3 credits from their home departments. Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
Choose one of the following:	
CRIM-215	Law and Society
POLS-200	Law & Society
Electives	
*Choose four of the following:**	
COMM-342	Communication Law and Ethics
CRIM-225	Criminal Law
CRIM-260	Courts
CRIM-315	Evidence
CRIM-489	Major Issues in Criminal Justice
PHIL-205	Symbolic Logic
PHIL-304	Philosophy of Law
PHIL-403	Social and Political Philosophy
POLS-325	International Law and Organizations
POLS-330	Human Rights in Global Perspective
POLS-425	Constitutional Law
POLS-430	Constitutional Rights and Liberties
POLS-460	Classical Constitutionalism, Virtue, & Law
POLS-465	Modern Constitutionalism, Liberty, & Equality

* Students majoring in criminal justice, philosophy, or political science may only count one course from their home department toward the requirements of the minor.

Literature and Media

Julie Johannes, Minor Advisor
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Program overview

Explore literature and other cultural works, as well as linguistics, and creative writing. The minor familiarizes students with works composed or translated into English and provides them with the opportunity to explore a variety of historical periods and geographical regions. Courses in the minor explore literary genres such as science fiction and fantasy; literary forms such as the novel, the short story, poetry, and graphic storytelling; and literary practices across media and multimedia arts. The minor builds an awareness of methods, theories and technologies for both the creation and analysis of literary texts, and provides an introduction to critical or creative writing.

Notes about this minor:

- This minor is closed to students majoring in English who have chosen a concentration in literature and media.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
Choose one of the following:	
ENGL-210	Literature and Cultural Studies
ENGL-275	Storytelling: [Genre/Theme]
Electives	
Choose four of the following:	
ENGL-301	The Art of Poetry
ENGL-302	The Short Story
ENGL-304	Drama and Theatre
ENGL-307	Mythology & Literature
ENGL-308	Shakespeare Drama
ENGL-309	Topics in Literary Forms*
ENGL-312	American Literature
ENGL-313	British Literature
ENGL-315	Digital Literature
ENGL-316	Global Literature
ENGL-318	Popular Literature
ENGL-322	Literary Geographies
ENGL-345	History of Madness
ENGL-370	Evolving English Language
ENGL-373	Media Adaptation
ENGL-375	Storytelling Across Media
ENGL-377	Transmedia Storyworlds
ENGL-391	Dangerous Texts
ENGL-410	Film Studies
ENGL-413	African-American Literature
ENGL-414	Women and Gender in Literature and Media
ENGL-418	Great Authors
ENGL-419	Literature and Technology
ENGL-420	Science Fiction

* Literary Forms (ENGL-309) may be taken up to two times, for six semester credit hours, as long as the course topics are different.
† Genre Fiction (ENGL-320) may be taken up to two times, for six semester credit hours, as long as the course topics are different.

Management Information Systems (MIS)

Matthew Cornwell, Minor Advisor
585-475-6916, mcornwell@saunders.rit.edu

Program overview

The management information systems minor is designed for students who wish to learn about computer-based information systems and how they are used in today's businesses. The minor enhances the career options of students in any major and increases their capacity to analyze, design, and manage business processes related to their program of study.

Notes about this minor:

- This minor is closed to students majoring in management information systems.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
MGIS-330	Systems Analysis and Design
Electives	
Choose four of the following:	
ACCT-445	Accounting Information Systems
MGIS-320	Database Management Systems
MGIS-350	Developing Business Applications
MGIS-355	Business Intelligence
MGIS-360	Building a Web Business
MGIS-425	Database Systems Development
MGIS-429	Cyber: Risk and Resilience
MGIS-445	Web Systems Development
MGIS-450	Enterprise Systems
MGIS-489	Seminar in MIS
MGIS-550	MIS Capstone
MGIS-589	Hacking for Defense (H4D)

Management

Matthew Cornwell, Minor Advisor
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Program overview

The management minor provides a solid introduction to the world of general business management.

Notes about this minor:

- This minor is closed to students majoring in global business management.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
MGMT-215	Organizational Behavior
MGMT-310	Leading Cross-Cultural & Virtual Teams
Electives	
Choose three of the following:	
DECS-350	Project Management
HRDE-386	Human Resources Development
INTB-300	Cross-Cultural Management
INTB-550	Competing Globally
MGMT-320	Organizational Effectiveness Skills
MGMT-330	Design Thinking and Concept Development
MGMT-340	Business Ethics and Corporate Social Responsibility
MGMT-350	Entrepreneurship
MGMT-450	Negotiations and Decision-Making
MGMT-470	Applied Entrepreneurship and Commercialization
MGMT-489	Seminar in Management
MGMT-550	Real World Business Solutions
MGMT-560	Strategic Management

Manufacturing Systems

Mary Ann Donato, Minor Advisor
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Program overview

The manufacturing systems minor provides students with a foundation in the professional study and practice of manufacturing operations. Students develop a required foundation of manufacturing processes and statistics, then they select three advanced manufacturing courses to fulfill the following requirements: quality engineering principles, engineering economics, lean production and supply systems, integrated design for manufacturing and assembly, or electronics manufacturing.

Notes about this minor:

- This minor is closed to students majoring in robotics and manufacturing engineering technology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
Choose one of the following	
NETS-120	Manufacturing Processes
RMET-120	Manufacturing Processes
Choose one of the following	
MATH-251	Probability and Statistics I
STAT-145	Introduction to Statistics I
STAT-205	Applied Statistics
STAT-251	Probability and Statistics for Engineers I
Electives	
Choose three of the following	
RMET-420	Quality Engineering Principles
RMET-450	Lean Production & Supply Chain Operations
RMET-460	Integrated Design for Manufacture & Assembly
RMET-545	Electronics Manufacturing

Marketing

Matthew Cornwell, Minor Advisor
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Program overview

Marketing, sales, and customer-oriented aspects of the marketing minor broaden students' learning experiences and professional opportunities by creating a secondary focus in marketing.

Notes about this minor:

- This minor is closed to students majoring in marketing.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
MKTG-230	Principles of Marketing
Electives	
Choose four of the following:	
MKTG-310	Marketing Research
MKTG-320	Digital Marketing
MKTG-330	Global Marketing
MKTG-350	Consumer Behavior
MKTG-360	Professional Selling
MKTG-365	Marketing Analytics
MKTG-370	Advertising and Promotion Management
MKTG-410	Search Engine Marketing and Analytics
MKTG-430	Social Media Marketing
MKTG-489	Seminar In Marketing
MKTG-550	Marketing Strategy

Mathematics

Hossein Shahmohamad, Minor Advisor
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Program overview

The mathematics minor is designed for students who want to learn new skills and develop new ways of framing and solving problems. It offers students the opportunity to explore connections among mathematical ideas and to further develop mathematical ways of thinking.

Notes about this minor:

- This minor is closed to students majoring in applied mathematics or computational mathematics.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Students must complete:	
MATH-181	Calculus I
or	
MATH-181A	Calculus I
or both the following	
MATH-171	Calculus A
MATH-172	Calculus B
plus one of the following	
MATH-182	Calculus II (or equivalent)
MATH-190	Discrete Mathematics for Computing
MATH-200	Discrete Mathematics and Introduction to Proofs
Electives	
Choose five of the following, with at least one course from Group II, at least two courses must be at the 300-level or higher, and at least three courses must not be required by the student's major:	
Group I	
MATH-219	Multivariable Calculus*
MATH-221	Multivariable and Vector Calculus*
MATH-221H	Honors Multivariable and Vector Calculus*
MATH-231	Differential Equations†
MATH-233	Linear Systems and Differential Equations†
MATH-241	Linear Algebra‡
MATH-241H	Honors Linear Algebra‡
MATH-251	Probability and Statistics
MATH-301	Mathematics of Simulation
MATH-311	Linear Optimization
MATH-312	Nonlinear Optimization
MATH-321	Game Theory
MATH-322	Combinatorial Game Theory
MATH-326	Boundary Value Problems
MATH-331	Dynamical Systems
MATH-361	Combinatorics
MATH-367	Codes and Ciphers
MATH-367H	Honors Codes and Ciphers
MATH-381	Complex Variables
Group II	
MATH-341	Advanced Linear Algebra
MATH-351	Graph Theory
MATH-371	Number Theory
MATH-411	Numerical Analysis
MATH-412	Numerical Linear Algebra
MATH-431	Real Variables I
MATH-432	Real Variables II
MATH-441	Abstract Algebra I
MATH-442	Abstract Algebra II
MATH-461	Topology
MATH-505	Stochastic Processes

* Students may choose only one of these courses, but no more.
† Students may choose only one of these courses, but not both.
‡ Students may choose only one of these courses, but not both.

Mechanical Engineering

Marca Lam, Minor Advisor
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Program overview

The minor in mechanical engineering exposes students to the core foundations of the discipline. Courses help non-majors explore high-technology careers and communicate more effectively with engineers on project teams. The minor consists of a five-course sequence that builds on prerequisite knowledge from calculus and engineering mechanics. Elective courses provide additional depth of knowledge in an area of individual student interest.

Notes about this minor:

- This minor is closed to students majoring in mechanical engineering.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Choose one of the following:	
MECE-102	Engineering Mechanics Lab
PHYS-206	University Physics I: AP-C Mechanics
PHYS-211	University Physics I
PHYS-211A	University Physics IA
MATH-182	Calculus II
Required Courses	
MECE-103	Statics
MECE-104	Engineering Design Tools
MECE-110	Thermodynamics I
Electives	
*Choose two of the following:**	
MECE-203	Strength of Materials I
MECE-205	Dynamics
MECE-210	Fluid Mechanics I
MECE-305	Materials Science with Applications
MECE-310	Heat Transfer I
MECE-317	Numerical Methods
MECE-320	System Dynamics
MECE-355	Fluid Mechanics II
MECE-402	Turbomachinery
MECE-403	Propulsion
MECE-405	Wind Turbine Engineering
MECE-406	Advanced Computer Aided Design
MECE-409	Aerodynamics
MECE-421	Internal Combustion Engines
MECE-510	Flight Dynamics
MECE-511	Orbital Mechanics
MECE-520	Introduction to Optimal Design
MECE-523	Powertrain Systems & Design
MECE-524	Vehicle Dynamics
MECE-529	Renewable Energy Systems
MECE-543	Classical Controls
MECE-544	Introduction to Composite Materials
MECE-550	Sustainable Energy Use in Transportation
MECE-555	Biomechatronics
MECE-557	Applied Biomaterials
MECE-558	Introduction to Engineering Vibrations
MECE-570	Manufacturing Processes and Engineering

* At least one course must be taken at the 300-level or higher.

Media Arts and Technology

Bruce Myers, Minor Advisor
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Program overview

The media arts and technology minor provides students with a five-course sampling of the media arts and technology major. After completing the required course, students may customize their selection of elective courses from diverse offerings related to media production, media architecture, media strategy, and media management.

Notes about this minor:

- This minor is closed to students majoring in print and graphic media technology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
MAAT-102	Introduction to Graphic Media
Choose one of the following:	
MAAT-368	Gravure and Flexography
MAAT-276	Paginated Graphic Workflow
MAAT-541	Digital Print Processes
Electives	
Choose four of the following:	
MAAT-106	Typography and Page Design
MAAT-108	Raster and Vector Imaging
MAAT-206	Print Production
MAAT-256	Principles of Printing
MAAT-266	Advanced Workflow
MAAT-271	Webpage Production I
MAAT-272	Webpage Production II
MAAT-301	Database Publishing
MAAT-306	Information Architecture Publishing
MAAT-307	Media Business Management
MAAT-365	Automation and Scripting for Graphic Media
MAAT-377	Advanced Retouching and Restoration
MAAT-402	Graphic Media Business Practices
MAAT-446	Magazine Publishing
MAAT-503	Operations Management in the Graphic Arts
MAAT-544	Color Management Systems
MAAT-550	Topics in Media Arts, Sciences, and Technology
MAAT-558	Package Printing
MAAT-561	Industry Issues and Trends
MAAT-563	Building Profit into Media Projects
MAAT-571	Digital Asset Management

Metals and Jewelry Design

Program overview

The metals and jewelry design minor gives you an opportunity to immerse yourself in a creative environment of problem solving and to develop traditional and contemporary metals and jewelry design skills. Through a personal investigation of traditional metal techniques and material processes for the fabrication of small objects and jewelry, you will develop a personal design aesthetic and vocabulary. This will be demonstrated through the creation of a portfolio of work.

Notes about this minor:

- This minor is closed to students majoring in the studio arts BFA who have chosen options in metals and jewelry design option.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
CMTJ-124	Metals and Jewelry Studio Survey
*Choose one of the following:**	
CMTJ-207	Design, Fabrication, and Forming
CMTJ-212	Fabrication, Casting, and Mold Making
Electives	
Choose three of the following:	
CMTJ-206	Methods and Practice
CMTJ-211	Design and Fabrication
CMTJ-207	Design, Fabrication, and Forming
CMTJ-212	Fabrication, Casting and Mold Making
CMTJ-301	Metals and Jewelry Design Junior I
CMTJ-302	Metals and Jewelry Design Junior II
CMTJ-530	Form and Fabrication: Metals and Jewelry Design†
STAR-503	CAD Drawing

* Students take either CMTJ-207 or CMTJ-212 as a required course. The other course may be taken as an elective to fulfill the total credit hours.
† CMTJ-530 can be taken a maximum of two times for this minor.

Microelectronic Engineering

Michael Jackson, Minor Advisor
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Program overview

The microelectronic engineering minor provides basic integrated circuit fabrication skills to students from science and other engineering related disciplines whose career path may involve the semiconductor industry. RIT has one of the finest cleanrooms in the world specializing in undergraduate microelectronic education. This minor enables students to utilize these state-of-the-art facilities while they develop the skills they need for success in the industry.

Notes about this minor:

- This minor is closed to students majoring in microelectronic engineering.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites*	
CHMG-131	General Chemistry for Engineers (or equivalent)
MATH-182	Calculus II
PHYS-212	University Physics II
Required Courses	
MCEE-201	IC Technology
MCEE-503	Thin Films
Electives	
Choose three of the following:	
EEEE-260	Introduction to Semiconductor Devices
MCEE-205	Statistics and Design of Experiments
MCEE-502	Semiconductor Process Integration
MCEE-505	Lithography Materials and Processes
MCEE-515	Nanolithography Systems
MCEE-550	CMOS Processing
MCEE-620	Photovoltaic Science and Engineering
MCEE-730	Metrology for Failure Analysis and Yield of ICs
MCEE-732	Microelectronics Manufacturing
MCEE-770	Microelectromechanical Systems

* Additional prerequisites may be required based on the choice of microelectronic engineering electives.

Military Studies and Leadership

Lt Col Jason A. Turner, Minor Advisor
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585-475-5545, jmjarm@rit.edu

Program overview

The minor in military studies and leadership provides students the opportunity to learn about military officer training and its mission to develop leaders for tomorrow's Armed Forces. Courses promote leadership and management, skills that can be employed in any career field, along with courses analyzing the military's role in national security affairs and foreign policy. Students choose the Air Force track or the Army track.

Notes about this minor:

- This minor is available to all Army ROTC and Air Force ROTC cadets. Students who are interested in this minor, but are not enrolled in the ROTC program, must gain approval and appropriate waivers before registering for courses.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Air Force Track	
Required Courses	
AERO-101	Heritage and Values I
AERO-102	Heritage and Values II
AERO-201	Team and Leadership Fundamentals I
AERO-202	Team and Leadership Fundamentals II
AERO-401	National Security/Leadership Responsibilities & Commissioning Preparation I
AERO-402	National Security/Leadership Responsibilities & Commissioning Preparation II
MGMT-300	Leading People & Effective Communication I
MGMT-301	Leading People & Effective Communication II
Army Track	
Required Courses	
ARMY-101	Introduction to Tactical Leadership I
ARMY-102	Introduction to Tactical Leadership II
ARMY-201	Foundations of Tactical Leadership I
ARMY-202	Foundations of Tactical Leadership II
ARMY-301	Applied Team Leadership I
ARMY-302	Applied Team Leadership II
ARMY-401	Adaptive Team Leadership I
ARMY-402	Adaptive Team Leadership II

Mobile Design and Development

Bryan French, Minor Advisor
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Program overview

The minor in mobile design and development provides non-computing majors with a firm foundation in designing applications for mobile devices. There is an explosion in the types and amount of mobile devices and this minor is designed to provide students with the ability to design and implement cross-platform applications.

Notes about this minor:

- This minor is closed to students majoring in computer science, computing and information technologies, cybersecurity, game design and development, human-centered computing, new media interactive development, software engineering, and web and mobile computing.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
Choose one of the following:	
GCIS-123	Software Development and Problem Solving I
ISTE-120	Computational Problem Solving in the Information Domain I
ISTE-140	Web & Mobile I*
ISTE-240	Web & Mobile II**
ISTE-252	Foundations of Mobile Design
ISTE-260	Designing the User Experience

* Students may take IGME-230, IGME-235, NACA-172, or NACT-270 as an alternative to the ISTE-140 requirement.

** Students may take IGME-390 as an alternative to ISTE-240.

Mobile Development

Bryan French, Minor Advisor
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Program overview

The minor in mobile development provides students enrolled in computing degree programs with experience designing and creating compelling native applications for mobile devices. Smartphones are outselling desktop computers. New mobile devices of varying sizes, types, and uses are being created everyday for both businesses and personal use and contexts. Developers are needed to create applications for these needs that perform well on the major mobile platforms.

Notes about this minor:

- This minor is closed to students majoring in web and mobile computing.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
Choose one of the following:	
ISTE-140	Web & Mobile I
IGME-230	Website Design & Implementation
IGME-235	Introduction to Web Technology for Game Developers
NACA-172	Website Development
NACT-270	Web Applications
Choose one of the following:	
ISTE-240	Web & Mobile II
IGME-330	Rich Media Web Application Development I
ISTE-252	Foundations of Mobile Design
ISTE-340	Client Programming
Choose one of the following:	
ISTE-454	Mobile Application Development I
ISTE-456	Mobile Application Development II

Modern Language and Culture – Arabic

Hiroko Yamashita, Minor Advisor
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Program overview

This minor provides two full years of modern language and culture instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor consists of five courses, either five language courses or a combination of language courses with up to two culture courses. Students with previous language skills must consult the minor adviser for placement evaluation before they register. Part of the requirements for this minor can be fulfilled by courses taken abroad.

Notes about this minor:

- This minor is closed to students majoring in international and global studies who have chosen an area of study in Arabic language or a field specialization in the Middle East; or are native speakers of Arabic.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five consecutive language courses:	
MLAR-201	Beginning Arabic I
MLAR-202	Beginning Arabic II
MLAR-301	Intermediate Arabic I
MLAR-302	Intermediate Arabic II
MLAR-401	Advanced Arabic I
MLAR-402	Advanced Arabic II
Students can take up to two culture courses as part of the Arabic minor. In addition to culture courses listed for the minor, other courses from other departments or schools dealing with aspects of Arabic culture may be approved by the faculty adviser.	
ANTH-275	Global Islam
ANTH-365	Culture and Politics in the Middle East
MLAR-449	Topics in Arabic

Modern Language and Culture – Chinese

Zhong Chen, Minor Advisor
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Program overview

This minor provides two full years of modern language and culture instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor consists of five courses, either five language courses or a combination of language courses with up to two culture courses. Students with previous language skills must consult the minor adviser for placement evaluation before they register. Part of the requirements for this minor can be fulfilled by courses taken abroad.

Notes about this minor:

- This minor is closed to students majoring in applied modern language and culture who have chosen the Chinese language track; students majoring in international and global studies students who have chosen an area of study in Chinese language or a field specialization in Asia; or are native speakers of Chinese.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five consecutive language courses:	
MLCH-201	Beginning Chinese I
MLCH-202	Beginning Chinese II
MLCH-301	Intermediate Chinese I
MLCH-302	Intermediate Chinese II
MLCH-310	Intermediate Conversational Chinese
MLCH-315	Intermediate Reading and Writing in Chinese
MLCH-401	Advanced Chinese I
MLCH-402	Advanced Chinese II
MLCH-410	Chinese for Science and Technology
MLCH-415	Professional Chinese
Students can take up to two culture courses as part of the Chinese minor. In addition to culture courses listed for the minor, other courses from other departments dealing with aspects of Chinese culture may be approved by the faculty adviser.	
ANTH-255	Regional Archaeology*
HIST-260	History of Premodern China
HIST-261	History of Modern China
HIST-365	Conflict in Modern East Asia
MLCH-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
PHIL-311	East Asian Philosophy
POLS-350	Politics in East Asia
POLS-351	Politics of China

* This course may be taken when the topic focuses on East Asia.

Modern Language and Culture – French

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Program overview

This minor provides two full years of modern language and culture instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor consists of five courses, either five language courses or a combination of language courses with up to two culture courses. Students with previous language skills must consult the minor adviser for placement evaluation before they register. Part of the requirements for this minor can be fulfilled by courses taken abroad.

Notes about this minor:

- This minor is closed to fluent native speakers of French.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five consecutive language courses:	
MLFR-201	Beginning French I
MLFR-202	Beginning French II
MLFR-301	Intermediate French I
MLFR-302	Intermediate French II
MLFR-310	French Oral Communication
MLFR-315	French Reading and Writing Proficiency
MLFR-401	Introduction to Modern French Society
MLFR-402	French-Speaking Cultures
MLFR-410	French for Science and Technology
MLFR-415	Professional French
Students can take up to two culture courses as part of the French minor. In addition to culture courses listed for the minor, other courses from other departments dealing with aspects of French and Francophone cultures may also be approved by the faculty adviser.	
ARTH-364	Art in Paris
HIST-270	History of Modern France
HIST-275	Screening the Trenches: The History of WWI through Film
HIST-470	Science, Tech, & European Imperialism: 1800-1965
MLFR-351	French Films and Hollywood
MLFR-352	The French Heritage in Films

Modern Language and Culture – German

Ulrike Stroszeck, Minor Advisor
uisgsl@rit.edu

Program overview

This minor provides two full years of modern language and culture instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor consists of five courses, either five language courses or a combination of language courses with up to two culture courses. Students with previous language skills must consult the minor adviser for placement evaluation before they register. Part of the requirements for this minor can be fulfilled by courses taken abroad.

Notes about this minor:

- This minor is closed to fluent native speakers of German.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five consecutive language courses:	
MLGR-201	Beginning German I
MLGR-202	Beginning German II
MLGR-301	Intermediate German I
MLGR-302	Intermediate German II
MLGR-310	German Conversation and Oral Practice
MLGR-315	German Grammar through Reading and Writing
MLGR-351	Modern German Culture through Film
MLGR-401	Advanced German I
MLGR-402	Advanced German II
MLGR-410	German for Science and Technology
MLGR-415	Professional German
Students can take up to two culture courses as part of the German minor. In addition to culture courses listed for the minor, other courses from other departments dealing with aspects of German and German-speaking cultures may also be approved by the faculty adviser.	
FNRT-210	Bach, Händel, and the Baroque
FNRT-211	Era of Haydn, Mozart, & Beethoven
HIST-280	History of Modern Germany
PHIL-417	Continental Philosophy

Modern Language and Culture – Italian

Elisabetta DAmanda, Minor Advisor
585-475-6522, exdgla@rit.edu

Program overview

This minor provides two full years of modern language and culture instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor consists of five courses, either five language courses or a combination of language courses with up to two culture courses. Students with previous language skills must consult the minor adviser for placement evaluation before they register. Part of the requirements for this minor can be fulfilled by courses taken abroad.

Notes about this minor:

- This minor is closed to fluent native speakers of Italian.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five consecutive language courses:	
MLIT-201	Beginning Italian I
MLIT-202	Beginning Italian II
MLIT-301	Intermediate Italian I
MLIT-302	Intermediate Italian II
MLIT-401	Advanced Italian I
MLIT-402	Advanced Italian II
Students can take up to two culture courses as part of the Italian minor. In addition to culture courses listed for the minor, other courses from other departments dealing with aspects of Italian culture may be approved by the faculty adviser.	
ARTH-311	Art and Architecture of Italy: 1250-1400
ARTH-312	Art and Architecture of Italy: 1600-1750
ARTH-317	Art and Architecture in Florence and Rome: 15th Century
ARTH-318	Art and Architecture in Florence and Rome: 16th Century
MLIT-351	Italian Cinema from Neorealism to the New Millennium

Modern Language and Culture – Japanese

Masako Murakami, Minor Advisor
585-475-4418, mxmgsl@rit.edu

Program overview

This minor provides two full years of modern language and culture instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor consists of five courses, either five language courses or a combination of language courses with up to two culture courses. Students with previous language skills must consult the minor adviser for placement evaluation before they register. Part of the requirements for this minor can be fulfilled by courses taken abroad.

Notes about this minor:

- This minor is closed to students majoring in applied modern language and culture who have chosen the Japanese language track; students majoring in international and global studies who have chosen an area of study in Japanese language or a field specialization in Asia; or are native speakers of Japanese.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five consecutive language courses:	
MLJP-201	Beginning Japanese I
MLJP-202	Beginning Japanese II
MLJP-301	Intermediate Japanese I
MLJP-302	Intermediate Japanese II
MLJP-310	Practical Reading and Speaking in Japanese
MLJP-315	Practical Writing and Speaking in Japanese
MLJP-401	Advanced Japanese I
MLJP-402	Creative Writing and Performance in Japanese
MLJP-404	Japanese Culture in Print
MLJP-405	Advanced Speaking in Japanese
MLJP-410	Japanese for Science and Technology
MLJP-415	Professional Japanese
Students can take up to two culture courses as part of the Japanese minor. In addition to culture courses listed for the minor, other courses from other departments dealing with aspects of Japanese culture, society, history, and art may also be approved by the faculty adviser.	
ANTH-255	Regional Archaeology*
FNRT-200	Anime
HIST-160	History of Modern East Asia
HIST-252	The United States and Japan
HIST-265	History of Modern Japan
HIST-266	History of Premodern Japan
HIST-450	Japan in History, Fiction, and Film
HIST-465	Samurai in Word and Image
MLJP-351	Language in Japanese Society
MLJP-451	Structure of the Japanese Language
PHIL-311	East Asian Philosophy
POLS-350	Politics of East Asia

* Course may be used when topic focuses on East Asia.

Modern Language and Culture – Portuguese

Hiroko Yamashita, Minor Advisor
585-475-6074, hxygsl@rit.edu

Program overview

This minor provides two full years of modern language and culture instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor consists of five courses, either five language courses or a combination of language courses with up to two culture courses. Students with previous language skills must consult the minor advisor for placement evaluation before they register. Part of the requirements for this minor can be fulfilled by courses taken abroad.

Notes about this minor:

- This minor is closed to fluent native speakers of Portuguese.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five consecutive language courses:	
MLPO-201	Beginning Portuguese I
MLPO-202	Beginning Portuguese II
MLPO-301	Intermediate Portuguese I
MLPO-302	Intermediate Portuguese II
MLPO-401	Advanced Portuguese I
MLPO-402	Advanced Portuguese II
Students can take up to two culture courses as part of the Portuguese minor. In addition to culture courses listed for the minor, other courses from other departments or schools dealing with aspects of Brazilian, Portuguese, or other Lusophone cultures may also be approved by the faculty adviser.	
ANTH-335	Culture and Politics in Latin America

Modern Language and Culture – Russian

Hiroko Yamashita, Minor Advisor
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Program overview

This minor provides two full years of modern language and culture instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor consists of five courses, either five language courses or a combination of language courses with up to two culture courses. Students with previous language skills must consult the minor advisor for placement evaluation before they register. Part of the requirements for this minor can be fulfilled by courses taken abroad.

Notes about this minor:

- This minor is closed to fluent native speakers of Russian.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives*	
Choose five of the following:	
MLRU-201	Beginning Russian I
MLRU-202	Beginning Russian II
MLRU-301	Intermediate Russian I
MLRU-302	Intermediate Russian II
MLRU-305	Intermediate Conversation and Intercultural Communication in Russian
MLRU-401	Advanced Russian I
MLRU-402	Advanced Russian II
Students can take up to two culture courses as part of the Russian minor. In addition to culture courses listed for the minor, other courses from other departments dealing with aspects of Russian culture may be approved by the faculty advisor.	
MLRU-405	Russian Language & Culture through Media
ENGL-416	Topics in Global Literatures†
ENGL-418	Great Authors†

* Under special circumstances, and with permission of the minor advisor, up to two culture courses may be substituted for two sequential language courses. Students should contact the minor advisor for a list of approved culture courses.
† When course specifically pertains to Russian literature.

Modern Language and Culture – Spanish

Diane Forbes, Minor Advisor
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Program overview

This minor provides two full years of modern language and culture instruction to prepare students for living and working within an intercultural society both at home and abroad. The minor consists of five courses, either five language courses or a combination of language courses with up to two culture courses. Students with previous language skills must consult the minor advisor for placement evaluation before they register. Part of the requirements for this minor can be fulfilled by courses taken abroad.

Notes about this minor:

- This minor is closed to students majoring in applied modern language and culture who have chosen the Spanish language track; or are fluent native speakers of Spanish.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five consecutive language courses:	
MLSP-201A	Beginning Spanish IA*
MLSP-201B	Beginning Spanish IB*
MLSP-202	Beginning Spanish II
MLSP-301	Intermediate Spanish I
MLSP-302	Intermediate Spanish II
MLSP-305	Spanish for Health Care
MLSP-310	Spanish Grammar Review
MLSP-315	Hispanic Culture & Civilization
MLSP-401	Advanced Spanish I
MLSP-402	Advanced Spanish II
MLSP-410	Spanish for Science and Technology
MLSP-415	Professional Spanish
Students can take up to two culture courses as part of the Spanish minor. In addition to culture courses listed for the minor, other courses from other departments dealing with aspects of Hispanic cultures may also be approved by the faculty advisor.	
ANTH-235	Immigration to the U.S.
ANTH-255	Regional Archaeology†
ANTH-335	Culture and Politics in Latin America
ANTH-350	The Global Economy and the Grassroots
ARTH-561	Latin American Art
ARTH-572	Art of the Americas
ENGL-418	Great Authors‡
MLSP-351	Gender and Sexuality in Hispanic Studies
MLSP-352	Caribbean Cinema
MLSP-353	Trauma and Survival in First-Person Narrative
SOCI-395	Borders: Humans, Boundaries, and Empires

* Students who begin the language sequence at the Beginning I Level will take either Beginning Spanish IA (MLSP-201A) or Beginning Spanish 1B (MLSP-201B). Placement will be determined in consultation with the department.

† When course focuses on Mesoamerica or Latin America.

‡ When course deals with Spanish and/or Latin American literature.

Museum Studies

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The museum studies minor provides students with a foundation in the history and practice of the museum as an institution and in the history, theory, and practice of collecting, exhibiting, and preserving the cultural heritage that defines the purpose and function of the museum. Courses cover a wide range of topics that are relevant to contemporary museology: the history of museums and collecting, the technical study of art and materials, the history and theory of exhibitions, interactive design, public history, the rise of the museum profession, legal and ethical concerns, and conservation.

Notes about this minor:

- This minor is closed to students majoring in museum studies.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
MUSE-220	Introduction to Museums
MUSE-221/HIST-221	Introduction to Public History
Electives	
*Choose three of the following:**	
HIST-322	Monuments and Memory
HIST-323	America's National Parks
HIST-324	Oral History
HIST-325	Museums and History
MUSE-224	History & Theory of Exhibitions
MUSE-225	Museums & the Digital Age
MUSE-226	Introduction to Digital Cultural Heritage
MUSE-241	Topics in Museum Studies: Art, Design & Exhibition Projects
MUSE-244	Topics in Museum Studies: Museums and Society
MUSE-249	Topics in Archive, Museums, and Community Collections
MUSE-340	Introduction to Archival Studies
MUSE-341	Museum Education & Interpretation
MUSE-354/FNRT-354	Exhibition Design
MUSE-357	Collections Management
MUSE-359	Digital and Critical Curation
MUSE-360	Visitor Engagement & Museum Technologies
MUSE-361	Tablet to Tablet: A History of Books
MUSE-388/VISL-388	Gender and Contemporary Art
MUSE-449	Special Topics in Museum Studies

Music and Technology

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The music and technology minor includes courses in music theory, music history, contemporary and historical musical instrument technology, acoustics, audio engineering, music for media, and music performance. This minor provides students with an avenue to integrate their technological interests and skills with music.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
EEET-261	Fundamentals of Audio Engineering
Plus one of the following:	
FNRT-205	Music Theory 1
FNRT-208	Composing for Media
Electives	
Choose three of the following:†	
EEET-361	Modern Audio Production
FNRT-203	American Popular & Rock Music
FNRT-204	Music & the Stage
FNRT-209	Medieval and Renaissance Music
FNRT-210	Bach, Handel, and the Baroque
FNRT-211	Era of Haydn, Mozart, & Beethoven
FNRT-212	Electronic Music Production
FNRT-250	RIT Singers*
FNRT-251	RIT Orchestra*
FNRT-252	RIT Concert Band*
FNRT-253	West African Percussion Ensemble*
FNRT-254	RIT Jazz Ensemble*
FNRT-255	RIT Chamber Orchestra*
FNRT-320	Music of the Romantic Era
FNRT-321	Music Since 1900
FNRT-322	Survey of Jazz
FNRT-328	Composing For Video Games and Interactive Media
FNRT-485	Music Theory 2
IGME-570	Digital Audio Production
IGME-671	Interactive Game and Audio
PRFL-250	Music History 1: Antiquity to Bach
PRFL-251	Music History 2: Haydn to Stravinsky
PRFL-327	American Musical Theater
PRFL-352	Russian Music and National Identity

* Each of these ensembles is one semester credit hour. Three semesters of participation are required to complete one minor course.
† It is strongly recommended that students select two music electives and one technology elective. At least two elective courses must be taken at the 300-level or higher.

Music Performance

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The music performance minor combines courses in music theory, music history, and world music with practical application through ensemble participation and applied music study. This combination of the academic and the practical offers students a more profound understanding of the art of music, and in a broader sense, an introduction to cultural development and the communication of ideas. A total of 15 credit hours from the suggested list of courses must be earned for the minor, with three credits in music theory and three credits from ensemble participation, required. Students can substitute 3 credits of Applied Music for three credits of ensemble, upon approval from the department of performing arts.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
FNRT-205	Music Theory 1
Ensemble Courses*	
Students choose at least three semester credits of the following one credit courses:	
FNRT-250	RIT Singers
FNRT-251	RIT Orchestra
FNRT-252	RIT Concert Band
FNRT-253	World Music Ensemble
FNRT-254	RIT Jazz Ensemble
FNRT-255	RIT Chamber Orchestra
FNRT-256	Applied Music†
Electives	
Choose three of the following:‡	
FNRT-202	Music & Global Cultures
FNRT-203	American Popular & Rock Music
FNRT-204	Music & the Stage
FNRT-208	Composing for Media
FNRT-209	Medieval and Renaissance Music
FNRT-210	Bach, Handel, and the Baroque
FNRT-211	Era of Haydn, Mozart, & Beethoven
FNRT-212	Electronic Music Production
FNRT-320	Music of the Romantic Era
FNRT-321	Music Since 1900
FNRT-322	Survey of Jazz
FNRT-328	Composing for Video Games and Interactive Media
FNRT-485	Music Theory 2
PRFL-250	Music History 1: Antiquity to Bach
PRFL-251	Music History 2: Haydn to Stravinsky
PRFL-327	American Musical Theater
PRFL-352	Russian Music and National Identity
SOIS-240	The Harmonica & the Blues

* Three credits in Music Theory and three credits of ensemble participation are required.
† A maximum of three semester of FNRT-256 may be counted as an elective course.
‡ A minimum of two courses must be taken at the 300-level or above.

Networking and Systems Administration

Lawrence Hill, Minor Advisor
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Program overview

This minor provides computing students with a firm foundation in networking and/or systems administration. Computer networks and the systems attached to these networks have become ubiquitous. Therefore, knowledge of how computer networks function, their administration, and the administration of the systems attached to them can be of value to every computing professional since their work is impacted in some way by computer networks and computer systems. Students may choose between two tracks: networking or system administration.

Notes about this minor:

- This minor is closed to students majoring in computing and information technologies.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Students choose a two course introductory programming sequence*	
CSCI-141	Computer Science I
CSCI-142	Computer Science II
or	
ISTE-120	Computational Problem Solving in the Information Domain I
ISTE-121	Computational Problem Solving in the Information Domain II
or	
ISTE-100	Computational Problem Solving in the Network Domain I
ISTE-101	Computational Problem Solving in the Network Domain II
or	
IGME-105	Game Development and Algorithmic Problem Solving I
IGME-106	Game Development and Algorithmic Problem Solving II
or	
CPET-121	Computational Problem Solving I
CPET-321	Computational Problem Solving II
or	
GCIS-123	Software Development and Problem Solving I
GCIS-124	Software Development and Problem Solving II
Required Courses	
NSSA-102	Computer Systems Concepts †
NSSA-241	Introduction to Routing and Switching †
Focus	
Students choose one focus and complete three courses:	
Networking	
NSSA-242	Wireless Networking
NSSA-441	Advanced Routing and Switching
NSSA-443	Network Design and Performance
Systems Administration	
NSSA-220	Task Automation Using Interpretive Languages
NSSA-221	Systems Administration I †
NSSA-244	Virtualization
NSSA-320	Configuration Management
NSSA-423	Scalable Computing Architectures

* An equivalent sequence may be approved by an advisor.
† Students in Computing Security are unable to use these courses as part of the three unique courses required for the minor as they are already part of their core or are equivalencies of courses they already take. Students will need to take three of the unmarked courses from their focus area.

Nutritional Sciences

Elizabeth Ruder, Minor Advisor
585-475-2402, ehrihst@rit.edu

Program overview

The nutritional sciences minor enhances a student's major with a focus on nutrients and human nutrition issues. The study of nutrients includes knowledge about their sources, metabolism, and relationship to health. Nutritional status impacts medicine, health care policy and promotion, global relationships, issues in anthropology and sociology, exercise science, food systems, hospitality, and behavioral health.

Notes about this minor:

- This minor is closed to students majoring in nutritional sciences.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
NUTR-215	Foundations of Nutritional Sciences
Choose one of the following course sequences	
MEDS-250, 251	Human Anatomy and Physiology I, II
MEDG-101, 102, 103, 104	Human Biology I, II and Human Biology Laboratory I, II
Electives	
Choose two of the following	
BIOL-111	Science in the Garden
BIOL-218	Biology of Plants
BIOL-305	Plants, Medicine and Technology
BIOL-403	Fundamentals of Plant Biochemistry and Pathology
BIOL-414	Animal Nutrition
HSPT-215	Principles of Food Production and Service
NUTR-205	Complementary and Integrative Approaches for Well-Being
NUTR-300	Sports Nutrition
NUTR-333	Nutrition Education for Health Professionals
NUTR-510	Integrative Approaches to Health
NUTR-525	Medical Nutrition Therapy I
NUTR-526	Medical Nutrition Therapy II
NUTR-555	Nutrition Throughout the Lifecycle
NUTR-580	Global Food and Nutrition Perspectives

Optical Science

James Ferwerda, Minor Advisor
585-475-4923, James.Ferwerda@rit.edu

Program overview

Optical science techniques are used in a variety of consumer products (digital cameras, CD players), communication technologies (optical fibers), medical imaging (infrared imaging), and the sciences (surveillance, remote sensing, astronomical systems). This minor can be an important complement to studies in electrical and microelectronic engineering, the biological sciences, physics, chemistry, mathematics, technical photography, and various majors in the field of applied science and technology.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- A grade of a C or better must be attained in all courses applied to the minor.
- All prerequisites must be met prior to taking courses that require them.
- Nine credits in the minor must be in courses not required by the student's home program and must be completed in residency at RIT.

Curriculum

COURSE	
Prerequisites	
MATH-181	Project-Based Calculus I (or equivalent)
MATH-182	Project-Based Calculus II (or equivalent)
PHYS-211	University Physics I (or equivalent)
PHYS-212	University Physics II (or equivalent)
Electives	
Students must complete one course from Group A, one course from Group B, one course from Group C and any two courses from Group D	
Group A	
IMGS-321	Geometric Optics
IMGS-322	Physical Optics
MCEE-515	Nanolithography Systems
PHPS-211	Photographic Optics
PHYS-365	Physical Optics
Group B	
IMGS-251	Radiometry
PHYS-408	Laser Physics
Group C	
IMGS-451	Imaging Detectors
IMGS-528	Design and Fabrication of Solid State Cameras
IMGS-542	Testing of Focal Plane Arrays
Group D	
CHMP-442	Physical Chemistry II
EEEE-374	EM Fields and Transmission Lines
IMGS-221	Vision & Psychophysics
IMGS-322	Physical Optics
IMGS-341	Interaction Between Light and Matter
IMGS-442	Imaging Systems Analysis and Modeling
MCEE-515	Nanolithography Systems
PHYS-213	Modern Physics I
PHYS-412	Advanced Electricity and Magnetism
PHPS-516	Scanning Electron Microscopy

Packaging Science

Stefanie Soroka, Minor Advisor
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Program overview

The packaging science minor offers courses covering a broad range of packaging activities, including development/design, testing, marketing, and production. Related legal, economic, and environmental/sustainability concerns are also addressed. Students from majors such as engineering, engineering technology, multidisciplinary studies, management, marketing, international business, industrial design, and print media could all benefit from the packaging science minor.

Notes about this minor:

- This minor is closed to students majoring in packaging science.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
PACK-301	Packaging Materials
PACK-302	Packaging Containers
Electives	
Choose three of the following:	
GRDE-431	Packaging Systems Collaborative
PACK-152	Packaging Design II
PACK-430	Packaging Regulations
PACK-530	Packaging Sustainability and the Environment
PACK-546	Pharmaceutical & Medical Packaging
PACK-547	Pharmaceutical and Medical Packaging Lab
PACK-550	Packaging Machinery
PACK-555	Import/Export Packaging
PACK-560	Converting and Flexible Packaging

Philosophy

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The philosophy minor provides students with the critical skill of philosophical analysis while they take courses on a wide variety of issues central to everyone's existence. Students get a solid grasp of the major philosophers, movements, and topics of philosophical debate that continue to shape our lives and how we act.

Notes about this minor:

- This minor is closed to students majoring in philosophy.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
*Choose five of the following:**	
PHIL-201	Ancient Philosophy
PHIL-202	Foundations of Moral Philosophy
PHIL-203	Modern Philosophy
PHIL-205	Symbolic Logic
PHIL-301	Philosophy of Religion
PHIL-303	Philosophy of Art/Aesthetics
PHIL-304	Philosophy of Law
PHIL-305	Philosophy of Peace
PHIL-306	Professional Ethics
PHIL-307	Philosophy of Technology
PHIL-308	Environmental Philosophy
PHIL-309	Feminist Theory
PHIL-310	Theories of Knowledge
PHIL-311	East Asian Philosophy
PHIL-312	American Philosophy
PHIL-313	Philosophy of Film
PHIL-314	Philosophy of Vision and Imaging
PHIL-315	Responsible Knowing
PHIL-316	Bioethics and Society
PHIL-317	Renaissance Philosophy
PHIL-318	Philosophies of Love, Sex, and Gender
PHIL-401	Great Thinkers
PHIL-402	Philosophy of Science
PHIL-403	Social and Political Philosophy
PHIL-404	Philosophy of Mind
PHIL-405	Philosophy of the Social Sciences
PHIL-406	Contemporary Philosophy
PHIL-407	Philosophy of Action
PHIL-408	Critical Social Theory
PHIL-409	Existentialism
PHIL-410	Medieval Philosophy
PHIL-411	Metaphysics
PHIL-412	Nineteenth Century Philosophy
PHIL-413	Philosophy of Literature
PHIL-414	Philosophy of Language
PHIL-415	Ethical Theory
PHIL-416	Seminar in Philosophy
PHIL-417	Continental Philosophy
PHIL-449	Topics in Philosophy
PHIL-571	Honors Philosophy

* At least one course must be at the 400 level.

Photography

Stephanie Solt, Minor Advisor
585-475-5951, selbbu@rit.edu

Program overview

The photography minor explores the diverse subject of photography from either an art or science perspective. Students develop both technical and aesthetic skills needed for creative, communication, or scientific applications. Students choose one of the following areas of emphasis: general photography, fine art photography, photojournalism, or photo sciences. Course selections are based upon career goals and aspirations, personal interests, and the availability of photography courses. Courses are selected from the School of Photographic Arts and Sciences's comprehensive portfolio of offerings in photographic sciences, photojournalism, applied photography, and fine art photography.

Notes about this minor:

- This minor is closed to students majoring in photographic arts and sciences exploration, photographic and imaging arts (all options) and photographic sciences.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
PHAR-161	Intermediate Digital Photography for Non-Majors
Area of Emphasis	
Students choose an area of emphasis from below. Students must complete the required course plus three elective courses within that area. At least two elective courses must be at the 300 level or higher.	
General Photography	
Required course	
PHAR-201	Elements of Fine Art Photography
Elective courses (Two courses must be 300-level or higher)	
IMSM-301	Imaging Systems
IMSM-302	Color Management Technology
PHAR-150	Introduction to Film Photography
PHAR-204	Elements of Visual Media
PHAR-211	Histories and Aesthetics of Photography I
PHAR-212	Histories and Aesthetics of Photography II
PHAR-363	Black and White Photography I
PHAR-364	Black and White Photography II
PHFA-359	The Constructed Image
PHFA-511	Contemporary Issues
PHFA-565	Color Photography Seminar
PHPS-261	Intro to Special Effects Photography
SOFA-127	Digital Filmmaking
Fine Art Photography	
Required course	
PHAR-201	Elements of Fine Art Photography
Elective courses (Two courses must be 300-level or higher)	
PHAR-150	Introduction to Film Photography
PHAR-211	Histories and Aesthetics of Photography I
PHAR-212	Histories and Aesthetics of Photography II
PHAR-363	Black and White Photography I
PHAR-364	Black and White Photography II
PHFA-359	The Constructed Image
PHFA-511	Contemporary Issues
PHFA-565	Color Photography Seminar
SOFA-127	Digital Filmmaking
Photojournalism	
Required course	
PHAR-203	Elements of Photojournalism

COURSE	
Elective courses (Two courses must be 300-level or higher)	
PHPJ-302	Photojournalism I
PHPJ-306	Picture Editing I
PHPJ-307	Ethics and Law
PHPJ-315	Non-Fiction Multimedia
PHPJ-455	Advanced Non-Fiction Multimedia
Photo Sciences	
Required course–Choose one of the following:	
PHPS-201	Scientific Photography I
Elective courses (Two courses must be 300-level or higher)	
IMSM-301	Imaging Systems
IMSM-302	Color Management Technology
PHPS-106	Photographic Science Fundamentals
PHPS-202	Scientific Photography II
PHPS-207	Vision, Perception and Imaging
PHPS-107	Photographic Technology II
PHPS-261	Intro to Special Effects Photography
PHPS-529	High Speed Photography
PHPS-539	Photographic Instrumentation
PHPS-541	Photomacrography: The Magnified Image from 1x to 20x
PHPS-542	Photomacrography
PHPS-546	Ophthalmic Imaging I
PHPS-563	Forensic Photography
Advertising Photography	
Required Course	
PHAR-202	Elements of Advertising Photography
Elective Courses (Two courses must be 300-level or higher)	
IDEA-315	Outside the Box
PHAP-301	Advertising Photography I
PHAP-308	Location Photography
PHAP-311	Photographing People
PHAP-312	Projects in Still Life Photography
PHAP-313	Editorial Photography
PHAP-314	Lighting Control and Manipulation
PHAP-326	Architectural Photography
PHAP-327	Fashion Photography
PHAP-328	Food Photography
PHAP-336	Photo Illustration
PHAP-337	Production Photography
PHAP-361	Foundations of Image Retouching
PHAP-366	Advanced Retouching and Compositing
PHAP-368	Interactive Music Video Experiences
PHAR-241	Advanced Video for Photographers
PHAR-301	Race, Civil Rights, and Photography in America

Physics

Dawn Hollenbeck, Minor Advisor
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Program overview

In a broad sense, the aim of physics as a discipline is to develop interconnected unifying threads bridging the vast number of seemingly diverse phenomena observed in the physical world around us. The minor provided students with the opportunity for additional study in physics in order to build a secondary area of expertise in support of their major or other areas of interest.

Notes about this minor:

- The minor is closed to students majoring in physics.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisites	
MATH-181	Calculus I
MATH-182	Calculus II
PHYS-211	University Physics I
PHYS-212	University Physics II
Required Courses	
PHYS-213	Modern Physics I
PHYS-283	Vibrations and Waves
Group A Electives†	
PHYS-315	Experiments in Modern Physics
PHYS-316	Advanced Laboratory in Physics
PHYS-360	Introduction to Chaotic Dynamics
PHYS-365	Physical Optics
PHYS-377	Advanced Computational Physics
Group B Electives†	
PHYS-214	Modern Physics II
PHYS-320	Mathematical Methods in Physics
PHYS-330	Classical Mechanics
PHYS-352	Introduction to Biological Physics
PHYS-408	Laser Physics
PHYS-411	Electricity and Magnetism
PHYS-414	Quantum Mechanics
PHYS-440	Thermal and Statistical Physics

* At least two courses must be taken at the 300-level or higher.
† Students must complete a minimum of nine semester credit hours of additional courses, where at least one course must be selected from Group A and one from Group B.

Plastics Engineering and Technology

Mary Ann Donato, Minor Advisor
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Program overview

The plastics engineering and technology minor provides students with a foundation in the professional study of plastic materials and their applications. This minor provides a broad perspective in plastics and polymer engineering/technology including the preparation of polymeric materials and polymer composites, their characterization, and the design and processing of these materials into useful products. The minor also includes a plastics characterization laboratory experience.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
CHMG-131	General Chemistry for Engineers*
Choose one of the following options:	
MCET-210	Foundations of Non-Metallic Materials
MCET-211	Characterization of Non-Metallic Materials Lab
or	
PACK-211	Packaging Metals & Plastics
MCET-574	Plastics and Composites Materials
MCET-575	Plastics and Composites Materials Laboratory
MCET-580	Plastics Manufacturing Technology
MCET-583	Plastics Product Design

* General & Analytical Chemistry I (CHMG-141) may be used as an equivalent course.

Political Science

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Program overview

The political science minor emphasizes the interdependence of domestic politics and international relations in the age of globalization. The minor brings together components of American politics, international relations, and comparative politics to provide students with both national and global perspectives on politics. Perhaps most important, the political science minor seeks to help students make sense of the increasingly complicated political environment that confronts them in their role as citizens.

Notes about this minor:

- The minor is closed to students majoring in political science.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
Choose one of the following:	
POLS-110	American Politics
POLS-120	Introduction to International Relations
Electives*	
American Politics	
Choose two of the following:	
POLS-115	Ethical Debates Amer Politics
POLS-200	Law & Society
POLS-250	State & Local Politics
POLS-280	Artificial Intelligence and the Political Good
POLS-290	Politics and the Life Sciences
POLS-295	Cyberpolitics
POLS-300	Rhetoric & Political Deliberation
POLS-305	Political Parties and Voting
POLS-310	The Congress
POLS-315	The Presidency
POLS-320	American Foreign Policy
POLS-340	Medicine, Morality, and Law
POLS-345	Politics and Public Policy
POLS-355	Political Leadership
POLS-365	Anarchy, Technology & Utopia
POLS-415	Evolution and the Law
POLS-420	Primate Politics
POLS-425	Constitutional Law
POLS-430	Constitutional Rights and Liberties
POLS-435	American Political Thought
POLS-460	Classical Constitutionalism, Virtue & Law
POLS-465	Modern Constitutionalism, Liberty & Equality
POLS-481	Women in Politics
POLS-485	Politics Through Fiction
POLS-490	Politics Through Film
POLS-525	Special Topics in Political Science
International Relations	
Choose two of the following:	
POLS-205	Ethics in International Politics
POLS-210	Comparative Politics
POLS-215	Tech, Ethics & Global Politics
POLS-220	Global Political Economy
POLS-280	Artificial Intelligence and the Political Good
POLS-285	Environmental Ethics and Political Ecology
POLS-320	American Foreign Policy
POLS-325	International Law and Organizations
POLS-330	Human Rights in Global Perspective
POLS-335	Politics in Developing Countries
POLS-350	Politics of East Asia
POLS-351	Politics of China
POLS-360	International Political Thought
POLS-370	Cyberwar, Robots, & the Future of Conflict
POLS-375	Grand Strategy
POLS-390	Greece and the Political Imagination
POLS-390H	Greece and the Political Imagination
POLS-410	Evolutionary International Relations
POLS-440	War and the State

COURSE	
POLS-445	Terrorism and Political Violence
POLS-455	Comparative Public Policy
POLS-525	Special Topics in Political Science
POLS-541	Peacekeeping and Conflict Transformation
POLS-542	War, Diplomacy, and State-Building

* At least two courses must be at the 300 level or higher.

Psychology

College of Liberal Arts, Office of Student Services
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Program overview

The minor in psychology provides the opportunity for students to take courses comprising the study of behavior. Students may select from among a variety of courses, which enables students to customize their minor while getting wide exposure to important concepts, issues, methods, and theories in psychology.

Notes about this minor:

- The minor is closed to students majoring in psychology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisite	
PSYC-101	Introduction to Psychology
Electives	
Choose five of the following:	
PSYC-221	Psychological Disorders
PSYC-221H	Honors Psychological Disorders
PSYC-222	Biopsychology
PSYC-223	Cognitive Psychology
PSYC-224	Perception
PSYC-224H	Honors Perception
PSYC-225	Social Psychology
PSYC-226	Developmental Psychology
PSYC-231	Death and Dying
PSYC-233	History & Systems in Psychology
PSYC-234	Industrial and Organizational Psychology
PSYC-235	Learning and Behavior
PSYC-236	Personality
PSYC-237	Psychology of Women
PSYC-238	Psychology of Religion
PSYC-239	Positive Psychology
PSYC-240	Human Sexuality
PSYC-241	Health Psychology
PSYC-242	Cultural Psychology
PSYC-255	Behavioral Science Research Methods
PSYC-300	Topics in Psychology
PSYC-313	Forensic Psychology

* All 200-level courses have PSYC-101 (Introduction to Psychology) as a prerequisite and all 300-level courses have at least one 200-level course as a prerequisite.

Public Policy

College of Liberal Arts, Office of Student Services
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Program overview

The public policy minor provides students with a foundation in the field of public policy and allows them to make connections between public policy and other fields of study. The minor underscores the role of public policy on science and technology-based problems. Students obtain a deeper understanding of public policy and the policy making process, how policy analysis impacts policymaking, and how public policies operate within a number of specific science or technological domains.

Notes about this minor:

- The minor is closed to students majoring in public policy.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
Choose one of the following:	
PUBL-101	Foundations of Public Policy
PUBL-201	Ethics, Values & Public Policy
Electives	
*Choose four of the following:**	
POLS-320	American Foreign Policy
POLS-345	Politics and Public Policy
POLS-455	Comparative Public Policy
PUBL-101	Foundations of Public Policy
PUBL-201	Ethics, Values & Public Policy
PUBL-210	Introduction to Qualitative Policy Analysis
PUBL-301	Public Policy Analysis
PUBL-302	Decision Analysis
PUBL-360	Social Policy and Inequity
PUBL-363	Cyber Security Policy and Law
PUBL-510	Technology Innovation and Public Policy
PUBL-515	Business and Public Policy
PUBL-520	Information & Communications Policy
PUBL-530	Energy Policy
PUBL-531	Climate Change: Science, Technology and Policy
PUBL-589	Topics in Public Policy
STSO-201	Science and Technology Policy
STSO-421	Environmental Policy
STSO-422	Great Lakes

* At least two courses must be taken at the 300-level or higher.

Quantum Information Science and Technology

Ben Zwickl, Minor Advisor
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Program overview

The minor in quantum information science and technology provides an introduction to the foundational concepts of quantum information science. Topics focus on how quantum devices are designed and operate and how they are being applied in emerging technologies, such as quantum computing, cryptography, and sensing.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Choose one of the following:	
MATH-172	Calculus B
MATH-182	Calculus II
MATH-182A	Calculus II
Choose one of the following:	
PHYS-111	College Physics I
PHYS-211	University Physics I
PHYS-211A	University Physics IA
PHYS-216	University Physics I: Physics Majors
Required Courses*	
CMPE-257	Introduction to Quantum Computing and Information Science
PHYS-251	Principles and Applications of Quantum Technology
Quantum Foundations	
CHMP-442	Physical Chemistry II
PHYS-414	Quantum Mechanics
PHYS-415	Advanced Quantum Mechanics
PHYS-667	Quantum Optics
Mathematical Foundations	
MATH-190	Discrete Mathematics for Computing
MATH-200	Discrete Mathematics and Introduction to Proofs
MATH-241	Linear Algebra
MATH-241H	Honors Linear Algebra
Enabling Technologies	
CMPE-160	Digital System Design I
CMPE-260	Digital System Design II
CMPE-350	Computer Organization
CMPE-660	Reconfigurable Computing
CPET-561	Embedded Systems Design I
CPET-563	Embedded Systems Design II
EEEE-420	Embedded Systems Design
EEEE-505	Modern Optics for Engineers
EEET-331	Signals, Systems, and Transforms
EEET-332	Signals, Systems and Transforms Lab
EEET-531	Fiber Optics Technology
MCEE-201	IC Technology
MCEE-503	Thin Films
MCEE-505	Lithography Materials and Processes
MCEE-515	Nanolithography Systems
MFET-556	Advanced Concepts in Semiconductor Packaging
PHYS-365	Physical Optics
PHYS-408	Laser Physics
PHYS-532	Solid State Physics
Quantum Applications	
CMPE-661	Hardware and Software Design for Cryptographic Applications
CSCI-331	Introduction to Artificial Intelligence
CSCI-455	Principles of Cybersecurity
CSCI-462	Introduction to Cryptography
CSCI-635	Introduction to Machine Learning
MATH-367	Codes and Ciphers
MCSE-715	Photonic Integrated Circuits
MCSE-731	Integrated Optical Devices and Systems

* The remaining four courses must come from at least two of the four focus areas.

Real Estate in Hospitality

Program overview

The real estate in hospitality minor seeks to develop your expertise in the planning, development, and management of real estate projects in the hospitality and related service industries. Course work enables you to pursue careers related to hospitality real estate development, asset management, franchising, and financing. In this minor, you will combine courses related to real estate, new business development, finance, and analytics.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisite Course	
ACCT-110	Financial Accounting
Required Courses	
HSPT-232	Hospitality Real Estate Development
HSPT-465	Hospitality Asset Management and Investment
Finance Electives	
Choose two of the following:	
FINC-361	Financial Institutions and Markets
FINC-460	Financial Analysis and Modeling
FINC-559	Financing New Ventures
HSPT-212	Franchising in the Service Sector
HSPT-315	Lodging Operations Analytics and Management
Project Management Elective	
Choose one of the following:	
CVET-462	Construction Project Management
DECS-350	Project Management

Robotics and Automation

Mary Ann Donato, Minor Advisor
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Program overview

The robotics and automation minor provides students with a foundation in the professional study and practice of programming, using, and working with industrial robots and the industrial automation systems used in the manufacturing environment. It provides a broad perspective that includes automation components, automation systems (hardware and software), industrial robots (hardware and software), and specific issues to implementing industrial robotic systems in the electronics manufacturing environment. It also includes learning and practice in developing automation/robotic code to accomplish specific functions across the major industrial automation software tools.

Notes about this minor:

- This minor is closed to students majoring in robotics and manufacturing engineering technology or mechatronics engineering technology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
RMET-340	Automation Control Systems
RMET-341	Automation Control Systems Lab
RMET-585	Robots & Automation
Choose one of the following	
CVET-210	Statics
MCET-220	Principles of Statics
MECE-103	Statics
Electives	
Choose six credits:	
CPET-133	Introduction to Digital and Microcontroller Systems
RMET-460	Integrated Design for Manufacture & Assembly
RMET-545	Electronics Manufacturing
RMET-571	Advanced Automation Systems and Control
RMET-587	Robotics: Sensors & Vision

Science, Technology, and Society

College of Liberal Arts, Office of Student Services
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Program overview

This minor integrates the studies of human society, science, and technology in their social content and context. The minor bridges the humanities and social sciences to provide better understanding of the ways in which science, technology, and society are mutually interacting forces in our world. Students learn how to analyze the social institutions, the built environment, and their role in creating them. This minor enhances a student's ability to contribute to the development of science and technology in ways that are historically, culturally, and ethically informed.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Choose five of the following:†	
ENGL-419	Literature and Technology
PHIL-402	Philosophy of Science
PUBL-530	Energy Policy
STSO-140	Science, Technology, and Values
STSO-201	Science and Technology Policy
STSO-230	Foundations of Engagement and Community Transformation
STSO-240	Social Consequences of Technology
STSO-246	History of Women in Science and Engineering
STSO-321	Face of the Land
STSO-335	Industry, Environment, and Community in Rochester
STSO-340	Technological Disasters
STSO-341	Biomedical Issues: Science and Technology
STSO-342	Gender, Science, and Technology
STSO-345	Makers of Modern Science
STSO-346	Technology in American History
STSO-425	Nature and Quantification
STSO-441	Cyborg Theory: (Re)thinking the Human Experience in the 21st Century
STSO-442	Science, Technology, and Society Classics
STSO-445	The Natural Sciences in Western History
STSO-489	Topics in Science, Technology, & Society
STSO-510	Interdisciplinary Capstone Seminar* (WI)
STSO-599	Science, Technology, Society Independent Study

* Interdisciplinary Capstone Seminar (STSO-510) requires enrollment in the minor and the completion of two courses from the minor.
† At least two (2) courses must be at the 300 level or higher. Three of the courses taken must be STSO.

Software Engineering

Megan Lehman, Minor Advisor
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Program overview

Students in disciplines with a heavy reliance on software applications may be interested in pursuing a minor in software engineering. The minor provides a broad view of the software engineering landscape including introductory material and fundamentals in design and process. Students deepen their software design skills and learn techniques for working on a productive software engineering team by choosing electives in design or process to gain a deeper understanding of one of these areas, or they may choose to balance their courses for a broad view of both topics.

Notes about this minor:

- The minor is closed to students majoring in software engineering.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
SWEN-261	Introduction to Software Engineering
SWEN-262	Engineering of Software Subsystems
SWEN-256	Software Process and Project Management
Electives	
Choose two courses from the following groups:	
Design	
SWEN-331	Engineering Secure Software
SWEN-342	Engineering of Concurrent and Distributed Software Systems
SWEN-343	Engineering of Enterprise Software Systems
SWEN-440	Software System Requirements and Architecture
SWEN-444	Human-Centered Requirements and Design
SWEN-445	Honors Human-Centered Requirements and Design
SWEN-549	Software Engineering Design Seminar
SWEN-563	Real-Time and Embedded Systems
SWEN-564	Modeling of Real-Time Systems
SWEN-565	Performance Engineering of Real-Time and Embedded Systems
SWEN-567	Hardware/Software Co-Design for Cryptographic Applications
Process	
SWEN-350	Software Process and Product Quality
SWEN-356	Trends in Software Development Processes
SWEN-559	Software Engineering Process Seminar
Other	
SWEN-220	Mathematical Models of Software
SWEN-340	Software Design for Computing Systems
SWEN-344	Engineering of Web Based Software Systems
SWEN-352	Software Testing
SWEN-514	Engineering Cloud Software Systems
SWEN-590	Software Engineering Seminar

Sports, Events, and Entertainment Management

Matthew Cornwell, Minor Advisor
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Program overview

The sports, events, and entertainment management minor focuses on providing you with the knowledge and skills needed to optimize the experiences of consumers and employees in sports and entertainment. You will learn to develop, implement, and manage sports and entertainment events, as well as the operations of sports and entertainment organizations. Your course work will focus on business strategy, analytics, customer service, purchasing, negotiations, contracts, and event/venue management–all as you work to manage and deliver highly-effective experiences.

Notes about this minor:

- Students ineligible to take this minor: This minor is open to students in all majors. However, because of the business courses required prior to a student beginning this minor, the minor is primarily intended for students matriculating in majors in Saunders College of Business. Students from other majors are welcome to complete this minor after also completing at least four additional pre-requisite courses in addition to the minor's core courses.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining pre-requisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Prerequisites	
Students are required to take the following four courses:	
MKTG-230	Principles of Marketing
Required Courses	
HSPT-375	Customer Experience Management
HSPT-420	Contemporary Issues in Sports and Entertainment Management
HSPT-350	Event and Project Management
HSPT-310	Event Design and Production
Electives	
Choose one of the following:	
ACCT-110	Financial Accounting
HRDE-380	Human Resource Management
HSPT-175	Marketing Beer, Wine, and Spirits
MGMT-215	Organizational Behavior
MKTG-320	Digital Marketing
MKTG-350	Consumer Behavior
MKTG-360	Professional Selling
MKTG-365	Marketing Analytics
MKTG-370	Advertising and Promotion Management

Structural Design

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Program overview

The structural design minor creates a focus on the different types of structures and materials used in design. It also introduces related design codes. The minor is designed to accommodate students majoring in mechanical engineering technology or mechanical engineering.

Notes about this minor:

- The minor is closed to students majoring in civil engineering technology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
CVET-332	Structural Analysis and Modeling
CVET-431	Structural Steel Design
CVET-432	Reinforced Concrete Design
Elective	
Choose two of the following:	
CVET-424	Building Information Modeling with Revit
CVET-433	Structural Timber Design
CVET-434	Design of Highway Bridges
CVET-435	Prestressed Concrete
CVET-436	Masonry Structures

Supply Chain Management

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Program overview

The supply chain management minor provides students with the knowledge to assist in developing and implementing efficient supplier systems in order to maximize customer value. Supply chain management is the coordination of the associated processes required both within a business, as well as across businesses and suppliers, to deliver products and services–from raw materials to customer delivery. The minor provides a background in areas commonly needed to support supply chain management, including business strategy, information systems, lean/quality management, customer service, purchasing, negotiations, contracts, forecasting, inventory management, logistics, and project management. Completion of this minor provides students with Lean Six-Sigma Yellow Belt body of knowledge.

Notes about this minor:

- The minor is closed to students majoring in supply chain management.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
DECS-435	Supply Chain Management Fundamentals
ISEE-582	Lean Six Sigma Fundamentals
Electives	
Choose three of the following:	
BLEG-300	Business Law II
DECS-350	Project Management
DECS-445	Managing Supplier Relations
INTB-315	Exporting and Global Sourcing
INTB-550	Competing Globally
ISEE-350	Engineering Management
ISEE-626	Contemporary Production Systems
ISEE-703	Supply Chain Management
ISEE-704	Logistics Management
ISEE-728	Production Systems Management
MGIS-320	Database Management Systems
MGIS-330	Systems Analysis and Design
MGIS-355	Business Intelligence
MGIS-450	Enterprise Systems
MGMT-310	Cross-Cultural & Virtual Teams
MGMT-450	Negotiations and Decision-Making

Surface Mount Electronics Manufacturing

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Program overview

The surface mount electronics manufacturing minor provides students with a foundation in the professional study and practice of the manufacturing of electronic circuits with components placed directly on printed circuit boards (surface mount technology). This minor provides a broad perspective that includes surface mount devices, assembly, lean production, and quality topics. It also includes learning and practice in electronic component layout, placement, high volume production, materials, circuit board design for manufacturability (design for manufacturability - DFM) and process controls.

Notes about this minor:

- This minor is closed to students majoring in robotics and manufacturing engineering technology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
Choose one of the following:	
MATH-251	Probability and Statistics I
STAT-145	Introduction to Statistics I
STAT-205	Applied Statistics
STAT-251	Probability and Statistics for Engineers I
RMET-420	Quality Engineering Principles
RMET-450	Lean Production & Supply Chain Operations
RMET-545	Electronics Manufacturing
RMET-556	Advanced Concepts in Semiconductor Packaging

Sustainable Product Development

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Program overview

This multidisciplinary minor is for students interested in exploring issues associated with developing and delivering sustainable product systems. Courses enhance the understanding of the three dimensions of sustainability (economic, ethical, and environmental), develop awareness of the need for more sustainable approaches to product development, and explore strategies for developing and delivering sustainable product systems.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
ISEE-345	Engineering Economy*
ISEE-785	Fundamentals of Sustainable Engineering
ISEE-786	Lifecycle Assessment
Electives	
Choose two courses from the following groups (at least one course must come from the social context group):	
Social Context	
CHEM-531	Climate Change: Science, Technology & Policy
ECON-520	Environmental Economics
ENVS-531	Climate Change: Science, Technology & Policy
ITDL-205	Grand Challenges: Clean Water
POLS-285	Environmental Ethics & Political Ecology
PUBL-510	Technological Innovation and Public Policy
PUBL-530	Energy Policy
PUBL-531	Climate Change: Science, Technology and Policy
SOIS-333	Wicked Problems
STSO-120	Introduction to Environmental Studies
STSO-140	Science, Technology, and Values
STSO-201	Science and Technology Policy
STSO-220	Environment and Society
STSO-240	Social Consequences of Technology
STSO-321	Face of the Land
STSO-326	History of Ecology and Environmentalism
STSO-330	Energy and the Environment
STSO-421	Environmental Policy
STSO-422	Great Lakes
STSO-521	Biodiversity and Society
STSO-550	Sustainable Communities
Technical	
CVET-505	Sustainable Building Design & Construction
EEEE-221	Clean & Renewable Energy Systems & Sources
EEET-251	Green Energy Systems
EEET-252	Green Energy Systems Laboratory
ESHS-210	Sustainable Earth Resources
ESHS-290	Social Responsibility and Environmental Sustainability
ESHS-310	Solid and Hazardous Waste Management
ESHS-330	Industrial Wastewater Management
ESHS-350	Greenhouse Gas Management
ESHS-360	Sustainable World Water Supply
ESHS-370	Sustainable Food Systems
ESHS-525	Air Emissions Management
ESHS-565	Sustainable Product Stewardship
ISEE-684	Engineering and the Developing World
ISEE-787	Design for the Environment
MCEE-520	Photovoltaic Science and Engineering
MCET-560	Alternative Energy
MCET-580	Plastics Manufacturing Technology
MCET-583	Plastics Product Design
MECE-348	Contemporary Issues: Energy and the Environment
MECE-405	Wind Turbine Engineering
MECE-550/650	Sustainable Energy Use in Transportation
MECE-529/629	Renewable Energy Systems
PACK-530	Packaging Sustainability and the Environment

* Students majoring in industrial engineering must complete an alternative course.

Theatre Arts

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The theatre arts minor provides an iterative balance of theory and practice that engages students intellectually and creatively. This combination of critical thinking and experiential learning offers students an in-depth understanding of the art of theater, as well as an introduction to the role of theater as both a form of commentary on, and as a reflection of, society and culture. The minor includes student participation in a minimum of three department sponsored theater productions via Theater Ensemble (FNRT-230) and Dramatic Theory and Text Analysis (FNRT-207).

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
PRFL-220	Theatre Ensemble*
PRFL-227	Dramatic Theory and Text Analysis
Electives‡	
Choose three of the following	
FNRT-204	Music & the Stage
PRFL-221	Fundamentals of Acting
PRFL-230	Devising Theatre: Creating Ensemble Based Performance
PRFL-239	Design/Stagecraft Apprenticeship†
PRFL-321	Traditions of Theatre in Europe
PRFL-322	Traditions of Theatre in the U.S.
PRFL-323	Traditions of Shakespearean Theatre
PRFL-324	African American Playwrights
PRFL-327	American Musical Theatre
PRFL-330	Performing Identity in Popular Media
PRFL-331	Fundamentals of Directing
PRFL-332	Fundamentals of Stage Management
PRFL-333	Auditioning Techniques
PRFL-334	Scene Study
PRFL-489	Special Topics
PRFL-490	Special Topics in Performing Arts
PRFN-200	Appreciation of Theatrical Design
PRFN-204	Scenic Painting and Props
PRFN-240	Dance History §
PRFN-243	Dance: Jazz §
PRFN-244	Dance: Hip Hop §
PRFN-246	Dance: Modern §
PRFN-247	Dance: Ballet §

* Students must take Theatre Ensemble (PRFL-220) three times.
† Students may substitute one credit of Design/Stagecraft Apprenticeship (PRFL-239) for one credit of Theatre Ensemble (PRFL-220).
‡ At least two courses must be taken at the 300-level or higher.
§ Only one dance class may be counted toward the completion of the Theatre Arts Minor.

Theatre Design and Stagecraft

Jill Bradbury, Minor Advisor
jmbnpa1@rit.edu

Program overview

The theatre design and stagecraft minor develops your understanding of the craft, theory, and art of design for theatre and dance. Courses explore the artistic, historical, and cultural elements of theatre design. Theoretical knowledge is balanced with experiential learning, obtained through the completion of required practicum experiences that involve participation in department productions. The minor is open to all hearing and deaf/hard of hearing students.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Courses	
PRFN-200	Appreciation of Theatrical Design
PRFN-218	Theatre Practicum*
List A Electives	
Choose two of the following:	
PRFN-301	Projection and Media Design I
PRFN-307	Costume Design I
PRFN-308	Scenic Design
PRFN-309	Lighting Design I
List B Electives	
Choose one of the following:	
PRFN-100	Introduction to Performing Arts
PRFN-101	Introduction to Accessibility and Inclusion in the Performing Arts
PRFN-102	Introduction to Stagecraft
PRFN-199	Independent Study: Performing Arts‡
PRFN-201	Appreciation of Media in Performance
PRFN-204	Scenic Painting and Props
PRFL-206	Stage Makeup
PRFN-207	Appreciation of Theatrical Costumes
PRFN-208	Appreciation of Theatrical Scenery
PRFN-209	Appreciation of Theatrical Lighting
PRFN-289	Special Topics: Performing Arts‡
PRFN-301	Projection and Media Design I
PRFN-303	Semiotics of the Visual in Performing Arts
PRFN-307	Costume Design I
PRFN-308	Scenic Design I
PRFN-309	Lighting Design I
PRFN-316	Playwriting I
PRFN-403	Performance Studies
PRFL-321	Traditions of Theatre in Europe
PRFL-322	Traditions of Theatre in the U.S
PRFL-323	Traditions of Shakespearean Theatre
PRFL-324	African American Playwrights
PRFL-327	American Musical Theater
PRFL-332	Fundamentals of Stage Management
PRFL-489	Special Topics‡

* Students must take a total of three (3) credits of PRFN-218.
‡ This course may be used when the course topic or experience has a technical theatre or design focus.

Visual Culture

Rebecca DeRoo, Minor Advisor
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Program overview

Visual culture explores the role of visual media in everyday life and its critical function in the dissemination of ideas in the public sphere. Emphasizing comparative critical approaches to the convergence of art, popular media, science, and technology, the minor engages globalized visual media ranging from photography, television and film, to new media (the web, digital imaging, and social networks), architecture, design, and art (painting, sculpture, and multimedia forms) in the context of such social arenas, as art, news, science, advertising, and popular culture.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Electives	
Group A	
Choose three of the following:	
COMM-240	Media, Creativity, and Innovation
FNRT-370	American Painting*
FNRT-372	American Film of the Studio Era
FNRT-375	Women/Gender/Art
MUSE-220	Introduction to Museums & Collecting
MUSE-224	History & Theory of Exhibitions
VISL-100	Introduction to Visual Art †
VISL-120	Introduction to Film †
VISL-140	Introduction to Visual Culture †
VISL-206	Queer Looks
VISL-295	Global Craftivism, Gender and Handwork
VISL-310	Media Production Lad: Project Development, Pitch and Funding
VISL-320	Contemporary Cinema: Fact and Fiction
VISL-354	Exhibition Design
VISL-373	American Film Since the Sixties
VISL-374	Art in the Age of the New Deal
VISL-376	Visual Culture Theory
VISL-377	Imag(in)ing Rochester
VISL-383	Traumatic Images
VISL-384	Art of Dying
VISL-388	Gender and Contemporary Art
VISL-390	Visual Activism
VISL-440	Deaf Art & Cinema
Group B	
Choose two of the following:	
ANTH-210	Culture and Globalization
ANTH-265	Native Americans in Film
ANTH-310	African Film
ANTH-325	Bodies and Culture
ANTH-330	Cultural Images of War and Terror
ANTH-375	Native American Cultural Resources and Rights
ANTH-425	Global Sexualities
ANTH-430	Visual Anthropology
ANTH-435	The Archaeology of Death
COMM-341	Visual Communication
ENGL-410	Film Studies
ENGL-421	The Graphic Novel
ENGL-422	Maps, Spaces and Places
HIST-421	Hands-on History
MLFR-351	French Films and Hollywood
MLSP-351	Gender and Sexuality in Hispanic Studies
MLSP-352	Caribbean Cinema
PHIL-303	Philosophy of Art/Aesthetics
PHIL-309	Feminist Theory
PHIL-313	Philosophy of Film
PHIL-314	Philosophy of Vision and Imaging
POLS-490	Politics Through Film
STSO-321	Face of the Land

* This course is offered on RIT's international campuses.
† Students may use credit for either VISL-100, or VISL-120, or VISL-140 towards the minor.

Water Resources

Scott Wolcott, Minor Advisor
585-475-6647, Scott.Wolcott@rit.edu

Program overview

The water resources minor broadens the learning experiences and professional opportunities of students in technical disciplines who have an interest in courses related to water treatment, wastewater treatment, hydrology, the environment and society.

Notes about this minor:

- The minor is closed to students majoring in civil engineering technology.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Courses	
CVET-250	Hydraulics
CVET-251	Hydraulics Lab
CVET-450	Principles of Water and Wastewater Treatment
Electives	
Choose one course from group A and one from Group B. The third course may be chosen from either group.	
Group A	
CVET-451	Design of Water & Wastewater Treatment Facilities
CVET-452	Groundwater Hydraulics
CVET-453	Stormwater Management
Group B	
CVET-423	GIS for CETEMS
ESHS-360	Sustainable World Water Supply
STSO-421	Environmental Policy

Web Development

Dan Bogaard, Minor Advisor
585-475-5231, Dan.Bogaard@rit.edu

Program overview

This minor provides students with a firm foundation in web development. The web has become a global, essential, and ubiquitous information delivery medium. Hence, knowledge of how the web works and how to effectively develop dynamic websites adds considerable value to computing majors. This minor provides foundational skills in web development, starting with simple sites, moving through dynamic client-side and server-side functionality, and culminating in web-based systems that create and access various information services.

Notes about this minor:

- This minor is closed to students majoring in web and mobile computing.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Prerequisites	
Students should complete course work in discrete mathematics and a two-course programming sequence prior to beginning course work for this minor.	
Required Courses	
ISTE-140	Web & Mobile I*
ISTE-230	Introduction to Database and Data Modeling †
ISTE-240	Web & Mobile II ‡
ISTE-340	Client Programming
ISTE-341	Server Programming
SWEN-383	Software Design Principles and Patterns §

* ISTE-140 can be replaced with IGME-230 or IGME-235.
† ISTE-230 can be replaced with CSCI-320.
‡ ISTE-240 can be replaced with IGME-330.
§ SWEN-383 can be replaced with SWEN-262.

Women's and Gender Studies

College of Liberal Arts, Office of Student Services
585-475-2444, libarts@rit.edu

Program overview

The women's and gender studies minor provides a critical framework to explore the significance of gender—as it intersects with racial, ethnic, religious, national, class, sexuality, and disability-based identities, past and present. Course builds knowledge about the personal, social, cultural, economic, and historical dynamics that inform gender and intersecting social categories. The minor builds fluency with critical analysis and knowledge-building methods drawn from women's and gender studies, feminist theories, critical race studies, queer studies, social justice work, and activism. The minor also provides valuable skills and experience applying these different lenses to real-world interactions with diverse individuals and communities to current social challenges that impact multiple parties, and with an eye to improving equity and fair outcomes for everyone concerned. Students will learn how to analyze and question power relations in all their rich complexities, locally, and globally.

Notes about this minor:

- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.

Curriculum

COURSE	
Required Course	
WGST-200	Foundations of Women and Gender Studies
Electives*	
Choose four of the following:	
ANTH-246	Gender and Health
ANTH-290	Language and Sexuality
ANTH-325	Bodies and Culture
ANTH-425	Global Sexualities
ARTH-577	Displaying Gender
GRDE-322	Women Pioneers in Design
MEDS-355	Introduction to Global Health
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
WGST-205	Feminist Practices of Inquiry
WGST-206	Queer Looks
WGST-210	Introduction to LGBTQ+ Studies
WGST-230	Men, Males, and Masculinities
WGST-235	Women, Work, and Culture
WGST-237	Psychology of Women
WGST-240	Human Sexuality
WGST-245	Prostitution and Vice
WGST-246	History of Women in Science and Engineering
WGST-250	Domestic Violence
WGST-255	Seminar on Sexual Violence
WGST-265	Women and Crime
WGST-282	Women, Gender, and Computing
WGST-290	American Women's and Gender History
WGST-291	The History of Families and Children in the U.S.
WGST-295	Global Craftivism, Gender, and Handwork
WGST-300	Feminist Leadership, Gender Equity & Empowerment
WGST-305	Feminist Activism for Gender Justice
WGST-309	Feminist Theory
WGST-318	Philosophies of Love, Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-335	Women and the Deaf Community
WGST-342	Gender, Science, and Technology
WGST-351	Gender and Sexuality in Hispanic Studies
WGST-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
WGST-357	Communication, Gender, and Media
WGST-361	Queering Gender
WGST-383	Traumatic Images
WGST-384	Art of Dying
WGST-388	Gender and Contemporary Art
WGST-414	Women and Gender in Literature and Media
WGST-449	Topics in WGST
WGST-451	Economics of Women and the Family
WGST-459	Topics in LGBTQ+ Studies
WGST-481	Women in Politics

* Only one non-WGST-coded course may be counted toward the min

Immersions

www.rit.edu/study/minors-and-immersions

As a part of their bachelor's degree requirements, students must complete an immersion—a concentration of three courses in a particular area. These upper-level courses are used to meet RIT's general education requirements and provide you with course work in a specialized area that can enhance and complement your major or allow you to explore a personal interest.

Advertising and Public Relations

Program overview

The advertising and public relations immersion provides opportunities for the advanced study of selected areas central to the persuasive arts as they apply to advertising and public relations, as well as education and practice in the writing, speaking, and design skills required of these professions.

Notes about this immersion:

- This immersion is closed to students majoring in advertising and public relations or communication.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Required Course	
Choose one of the following:	
COMM-211	Principles of Advertising
COMM-212	Public Relations
Electives	
Choose two of the following:	
COMM-202	Mass Communications
COMM-211	Principles of Advertising
COMM-212	Public Relations
COMM-221	Public Relations Writing
COMM-303	Small Group Communication
COMM-305	Persuasion
COMM-321	Copywriting and Visualization
COMM-322	Campaign Management and Planning
COMM-341	Visual Communication
COMM-346	Global Media
COMM-356	Critical Practice in Social Media

* At least one course must be taken at the 300-level or above.

African Studies

Program overview

The immersion in African studies enables students to gain knowledge about African societies, cultures, histories, and modern political realities, and diasporic communities in different parts of the world.

Notes about this immersion:

- This immersion is closed to students who are majoring in international and global studies who have chosen a specialization in African studies.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-255	Regional Archaeology†
ANTH-310	African Film
ANTH-345	Genocide and Transitional Justice
ANTH-365	Culture and Politics in the Middle East
ANTH-430	Visual Anthropology
ANTH-489	Topics in Anthropology §
ENGL-316	Global Literature‡
ENGL-413	African-American Literature
HIST-245	American Slavery and Freedom
SOCI-210	Black America-Culture & HipHop
SOCI-220	Minority Group Relations
SOCI-330	Urban (In)Justice
SOCI-489	Topics in Sociology §

† Course may be used when the topic focuses on the Middle East.
‡ Course may be used when the topic focuses on Caribbean Literature.
§ Course may be used when topic is relevant to African Studies.
* ANTH-275 and ANTH-365 are exclusively offered at and through RIT global campuses.

American Arts

Program overview

This immersion provides students with the opportunity to study the American arts through a variety of disciplines, including painting, architecture, film, photography, music, theatre, and mass media. Each course presents American art within the context of the broader current of American life, including its history, philosophy, social, and cultural traditions.

Notes about this immersion:

- Students must take at least one course from each group.

Curriculum

COURSE	
Electives	
*Choose three courses from the following:**	
Visual culture	
FNRT-370	American Painting†
FNRT-372/VISL-372	American Film of the Studio Era ‡
VISL-206/WGST-206	Queer Looks
VISL-373	American Film Since the Sixties ‡
VISL-377	Imag(in)ing Rochester
VISL-383/WGST-383	Traumatic Images
VISL-384/WGST-384	Art of Dying
Performing arts	
FNRT-203	American Popular & Rock Music
FNRT-322	Survey of Jazz
PRFL-327	American Musical Theatre

* Students must complete one course from the Visual Culture list and one course from the Performing Arts list. The third course may be taken from either list.
† This course is offered on RIT's international campuses.

American Indian and Indigenous Studies

Program overview

The immersion in American Indian and indigenous studies enhances students' knowledge of the unique heritage of American Indian and indigenous peoples and their relationships with people from other communities and nations. This enhanced understanding is grounded in the study of the histories, collective memories, cultures, and languages of American Indian and indigenous peoples, and the representations, stereotypes, and pertinent laws and policies governing their lives. Immersion courses emphasize indigenous ways of knowing and learning in the past and present in the Americas and across the globe.

Notes about this immersion:

- This immersion is closed to students majoring in international and global studies who have chosen the indigenous studies track.

Curriculum

COURSE	
Required Course	
ANTH-260	Native North Americans
Electives	
*Choose two of the following:**	
ANTH-210	Culture and Globalization
ANTH-255	Regional Archaeology†
ANTH-265	Native Americans in Film
ANTH-312	People Before Cities
ANTH-335	Culture and Politics in Latin America
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-375	Native American Cultural Resources and Rights
ANTH-430	Visual Anthropology
ANTH-489	Topics in Anthropology‡
SOCI-361	Sociology of Numbers
SOCI-395	Borders:Humans, Boundaries, and Empires
SOCI-489	Topics in Sociology‡

* At least one course must be taken at the 300-level or above.
† Course may be used when topic focuses on Mesoamerica or North America.
‡ Course may be used when topic is relevant to American Indian/Indigenous Studies

American Politics

Program overview

Students are introduced to the fundamental principles, institutions, and issues of American government. In addition, the strengths and limitations of American constitutionalism are emphasized throughout and current political and policy questions facing the country are examined. The overarching intention of the immersion is to give students the necessary tools to deliberate upon the political questions of the day and to actively participate in the political process.

Notes about this immersion:

- This immersion is closed to students majoring in political science.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
*Choose three of the following:**	
POLS-200	Law & Society
POLS-250	State & Local Politics
POLS-280	Artificial Intelligence and the Political Good
POLS-290	Politics and the Life Sciences
POLS-295	Cyberpolitics
POLS-300	Rhetoric & Political Deliberation
POLS-305	Political Parties and Voting
POLS-310	The Congress
POLS-315	The Presidency
POLS-320	American Foreign Policy
POLS-340	Medicine, Morality, and Law
POLS-345	Politics and Public Policy
POLS-355	Political Leadership
POLS-365	Anarchy, Technology & Utopia
POLS-415	Evolution and the Law
POLS-420	Primate Politics
POLS-425	Constitutional Law
POLS-430	Constitutional Rights and Liberties
POLS-435	American Political Thought
POLS-460	Classical Constitutionalism, Virtue & Law
POLS-465	Modern Constitutionalism, Liberty & Equality
POLS-481	Women in Politics
POLS-485	Politics Through Fiction
POLS-490	Politics Through Film

* At least one course must be taken at the 300-level or above.

American Sign Language and Deaf Cultural Studies

Jillian Sinclair, Immersion Advisor
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Program overview

The ASL and Deaf Cultural Studies immersion prepares students in the multi-disciplinary study of American Sign Language and Deaf Culture. Open to hearing and deaf students, courses address topics in the field of ASL and Deaf Cultural Studies, including the study of ASL and its structure, ASL literature, literature in English pertaining to the Deaf experience, the history of Deaf people in the U.S. and around the world, Deaf art and cinema, the experience of Deaf people from racial, ethnic, and other underrepresented groups, intersectionality, oppression in the lives of Deaf people, and various political, legal, and educational issues affecting members of Deaf communities.

Students enrolled in the ASL-English Interpretation major can pursue the immersion if they choose an emphasis on Deaf Cultural Studies. They cannot apply ASL courses towards the immersion. For ASL-English Interpretation majors, the immersion courses must also be different from the two Deaf Cultural studies courses they elect to fulfill the Deaf cultural studies requirements for their major.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ENGL-417	Deaf Literature
HIST-230	American Deaf History
HIST-231	Deaf People in Global Perspective
HIST-330	Deafness and Technology
HIST-333	Diversity in the Deaf Community
HIST-335	Women and the Deaf Community
MLAS-201	Beginning American Sign Language I
MLAS-202	Beginning American Sign Language II
MLAS-301	Intermediate American Sign Language I
MLAS-302	Intermediate American Sign Language II
MLAS-351	Linguistics Of American Sign Language
MLAS-352	American Sign Language Literature
MLAS-401	Advanced American Sign Language I
MLAS-402	Advanced American Sign Language II
NHSS-251	Deaf Culture and Contemporary Civilization
NHSS-275	Visual Expressions of Deaf Culture
SOCI-240	Deaf Culture in America
VISL-440	Deaf Art & Cinema

Analytic and Expressive Communication

Program overview

Employers show a preference for effective communicators with strong analytic or logical reasoning skills. An immersion in analytic and expressive communication provides you with the opportunity to develop both oral and written communication abilities grounded in reasoned argument, which in turn contributes to your individual confidence and empathetic thinking. Courses in this immersion may rely in part upon great or transformative texts selected for their relevance for learning rhetoric, argument, critical thinking, and/or ethics, and have the option to incorporate activities in RIT's Expressive Communication Center.

Notes about this immersion:

- This immersion is closed to students majoring in advertising and public relations, communication, journalism, and philosophy.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Applied Statistics

Program overview

Deepen your technical background and gain further appreciation for modern mathematical sciences and the use of statistics as an analytical tool.

Notes about this immersion:

- This immersion is closed to students majoring in applied statistics and data analytics.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Prerequisites	
MATH-181	Calculus I (or equivalent)
MATH-182	Calculus II (or equivalent)
Electives	
*Choose three of the following:**	
MATH-251	Probability and Statistics
MATH-505	Stochastic Processes
STAT-205†	Applied Statistics
STAT-257	Statistical Inference
STAT-305	Regression Analysis
STAT-325	Design of Experiments
STAT-335	Introduction to Time Series
STAT-345	Nonparametric Statistics
STAT-405	Mathematical Statistics I
STAT-406	Mathematical Statistics II
STAT-521	Statistical Quality Control

* At least one course must be taken at the 300-level or above.
† Students may not take both STAT-257/MATH-252 and STAT-205 and receive credit.

Archaeology

Program overview

Archaeology is the study of the human past by means of the physical residues of past human behavior: for example, pottery, stone, and metal tools, and the remains of ancient dwelling sites. An archaeologist explains how human society has changed and developed over time using such physical evidence. Archaeology employs techniques from the physical sciences to build a more detailed picture of the human past. Students explore the worlds of the past through hands-on applications of physical science techniques in a diverse range of fields, including chemistry, metallurgy, biology, and material science, applying these disciplines in a novel and challenging context.

Notes about this immersion:

- This immersion is closed to students majoring in sociology and anthropology who have chosen the archaeology track.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-103	Archaeology and the Human Past
ANTH-215	Field Methods in Archaeology
ANTH-230	Buried Treasure: Archaeology in Popular Culture
ANTH-250	Themes in Archaeological Research
ANTH-255	Regional Archaeology
ANTH-312	People Before Cities
ANTH-360	Humans and Their Environment
ANTH-375	Native American Cultural Resources and Rights
ANTH-415	Archaeological Science
ANTH-420	Exploring Ancient Technology
ANTH-435	The Archaeology of Death
ANTH-489	Topics in Anthropology*

* This course may be used towards the immersion when the topic is pertinent to archaeology.

Art History

Program overview

Explore the history of art and architecture across multiple cultures and eras. Art historians examine a culture's artistic production, analyzing form, content, and creative context to better understand how art expresses the intent of the artist, the interpretation of the viewer, or particular cultural values and ideals. Students will use art historical methodologies to evaluate works of art, formulate a history of artistic style, analyze art in relation to its historical context, and engage with the world of contemporary art.

Notes about this immersion:

- This immersion is closed to students majoring in 3D digital design, graphic design, illustration, industrial design, interior design, medical illustration, museum studies, new media design, photographic and imaging arts (all options), photographic science, and studio arts (all options).

Curriculum

COURSE	
Electives	
*Choose three of the following:**	
ARTH-311	Art and Architecture of Italy: 1250-1400
ARTH-312	Art and Architecture of Italy: 1600-1750
ARTH-317	Art and Architecture in Florence and Rome: 15th Century
ARTH-318	Art and Architecture in Florence and Rome: 16th Century
ARTH-364	Art in Paris
ARTH-366	18th, 19th Century Art
ARTH-368	20th Century Art: 1900-1950
ARTH-369	20th Century Art: Since 1950
ARTH-373	Art of the Last Decade
ARTH-378	Baroque Painting in Flanders
ARTH-379	Renaissance Painting in Flanders
ARTH-392	Theory And Criticism of 20th Century Art
ARTH-457	Art and Activism
ARTH-500	Postmodernism and After: Contemporary Aesthetics
ARTH-521	The Image
ARTH-541	Art and Architecture of Ancient Rome
ARTH-544	Illuminated Manuscripts
ARTH-549	Topics in Global Art and Architecture:
ARTH-550	Topics in Art History
ARTH-551	Topics in Art History, Writing Intensive
ARTH-555	Topics in Medieval Art and Architecture
ARTH-556	Art Comics
ARTH-558	The Gothic Revival
ARTH-561	Latin American Art
ARTH-563	Modern Architecture
ARTH-568	Art and Technology: from the Machine Aesthetic to the Cyborg Age
ARTH-572	Art of the Americas
ARTH-573	Conceptual Art
ARTH-574	Dada and Surrealism
ARTH-577	Displaying Gender
ARTH-578	Edvard Munch
ARTH-584	Scandinavian Modernism
ARTH-586	History of Things: Studies in Material Culture
ARTH-588	Symbols and Symbol Making: Psychoanalytic Perspectives on Art
FNRT-384	Art of Dying
FNRT-388	Gender and Contemporary Art
MUSE-224	History & Theory of Exhibitions
MUSE-388	Gender and Contemporary Art
VISL-224	History & Theory of Exhibitions
VISL-384	Art of Dying
VISL-388	Gender and Contemporary Art

* Students should take no more than one FNRT, MUSE, WGST, VISL class.

Astronomy

Program overview

The astronomy immersion provides students with the opportunity for additional study in astronomy in order to build a secondary area of expertise in support of their major or other areas of interest. The immersion offers a broad background in astronomy with courses providing a broad survey of modern astrophysics and the techniques and technologies used to investigate astronomical phenomena.

Notes about this immersion:

- This immersion is closed to students majoring in physics.

Curriculum

COURSE	
Prerequisites	
MATH-181	Calculus I
MATH-182	Calculus II
PHYS-211	University Physics I
PHYS-212	University Physics II
Required course	
PHYS-220	University Astronomy
Electives	
Choose two of the following:	
PHYS-370*	Stellar Astrophysics
PHYS-371*	Galactic Astrophysics
PHYS-372*	Extragalactic Astrophysics and Cosmology
PHYS-373	Observational Astronomy

* PHYS-213 (Modern Physics I) is a prerequisite for PHYS-370 (Stellar Astrophysics), PHYS-371 (Galactic Astrophysics), and PHYS-372 (Extragalactic Astrophysics and Cosmology).

NOTE: PHYS-370, PHYS-371, PHYS-372, and PHYS-373 are offered in alternate years. Contact the Astronomy Minor Advisor for the schedule.

Biology: Cellular and Molecular

Program overview

The biology: cellular and molecular immersion provides students with the opportunity to experience courses in modern cell and molecular biology. Students complete a foundational course in molecular biology and the accompanying laboratory course and then go on to study additional cellular and molecular biology subjects in more detail.

Notes about this immersion:

- The immersion is closed to students majoring in biochemistry, bioinformatics and computational biology, biology, biomedical engineering, biomedical sciences, biotechnology and molecular bioscience, environmental science, and physician assistant.

Curriculum

COURSE	
Required Course	
BIOL-206	Molecular Biology
BIOL-216	Molecular Biology Lab
Electives*	
Choose two of the following:	
BIOL-265	Evolutionary Biology
BIOL-302	Cell Biology
BIOL-311	Introduction to Microbiology
BIOL-321	Genetics
BIOL-322	Developmental Biology
BIOL-365	Introduction to Population Genetics
BIOL-427	Microbial and Viral Genetics

* At least one course must be at the 300-level or above.

Biology: Ecology and Evolution

Program overview

The biology: ecology and evolution immersion provides students with the opportunity to experience courses in ecology and evolutionary biology. Students complete a foundational course in ecology or evolution and then have a choice of electives.

Notes about this minor:

- The minor is closed to students majoring in biochemistry, bioinformatics and computational biology, biology, biomedical engineering, biomedical sciences, biotechnology and molecular bioscience, environmental science, and physician assistant.
- Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in the minor.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
Choose one of the following:	
BIOL-240	General Ecology
BIOL-265	Evolutionary Biology
Electives	
Choose two of the following:	
BIOL-207	Galapagos: Ecology and Evolution
BIOL-211	Invertebrate Zoology
BIOL-212	Vertebrate Zoology
BIOL-220	Biology of Fungi and Insects
BIOL-240	General Ecology
BIOL-265	Evolutionary Biology
BIOL-313	Comparative Animal Physiology
BIOL-365	Introduction to Population Genetics
BIOL-575	Conservation Biology
ENVS-305	Urban Ecology
ENVS-531	Climate Change: Science Technology & Policy
MEDS-250	Human Anatomy and Physiology I
MEDS-251	Human Anatomy and Physiology II

Black Studies

Program overview

The interdisciplinary immersion in Black studies examines the social construction of racial differences and its relation to the perpetuation of racism and racial domination. A key component of this immersion is to investigate the meanings and dimensions of Blackness that reverberate from slavery and colonialism to the persistent political, social, and cultural implications of racialization in the 21st century. The immersion emphasizes how Blackness intersects with other ethnic identities and how it is shaped by gender, sexuality, and economic inequities. The aim is to refine and advance students' knowledge of Black life-worlds and experiences across the globe.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-246	Gender and Health
ANTH-310	African Film
ANTH-335	Culture and Politics in Latin America
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-410	Global Cities
ANTH-430	Visual Anthropology
ANTH-489	Topics in Anthropology *
COMM-306	Rhetoric Of Race Relations
ENGL-413	African-American Literature
ENGL-414	Women and Gender in Literature and Media
HIST-245	American Slavery and Freedom
MLSP-352	Caribbean Cinema
SOCI-210	Black America-Culture & HipHop
SOCI-220	Minority Group Relations
SOCI-246	Gender and Health
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-361	Sociology of Numbers
SOCI-489	Topics in Sociology *
SOCI-395	Borders: Human, Boundaries and Empires

*Course may be used when topic is relevant to Black Studies.

Chemistry

Program overview

All of the required or optional courses for the chemistry immersion are core chemistry courses within the chemistry curriculum.

Notes about this immersion:

- This immersion is closed to students majoring in biochemistry and chemistry.

Curriculum

COURSE	
Prerequisites	
CHMG-141	General & Analytical Chemistry I
CHMG-145	General & Analytical Chemistry I Lab
CHMG-142	General & Analytical Chemistry II
CHMG-146	General & Analytical Chemistry II Lab
or	
CHMG-131	General Chemistry for Engineers
or	
CHEM-171	General Chemistry
Required course	
CHMO-231	Organic Chemistry I
Electives	
Choose two of the following:	
CHMA-215	Quantitative Analysis
CHMA-315	Instrumental Analysis
CHMB-402	Biochemistry I
CHMI-351	Descriptive Inorganic Chemistry
CHMO-232	Organic Chemistry II

Climate Change: An Interdisciplinary Problem

Program overview

This interdisciplinary immersion introduces students to the scientific, technological, and social issues surrounding global environmental climate change.

Notes about this immersion:

- This immersion is closed to students majoring in environmental science or environmental sustainability, health and safety.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Required Course	
Choose one of the following courses:	
CHEM-531	Climate Change: Science Technology & Policy
ENVS-531	Climate Change: Science Technology & Policy
PUBL-531	Climate Change: Science, Technology and Policy
Electives	
Choose one of the following courses:	
HIST-345	Environmental Disasters
PHIL-308	Environmental Philosophy
PUBL-530	Energy Policy
SOIS-333	Wicked Problems
STSO-326	History of Ecology and Environmentalism
STSO-421	Environmental Policy
STSO-422	Great Lakes
Choose one of the following courses:	
ENVS-101	Concepts of Environmental Science
ENVS-111	Soil Science
ENVS-152H	Honors: The Greening of RIT
ENVS-250	Applications of Geographic Information Systems
ENVS-301	Environmental Science Field Skills
ENVS-305	Urban Ecology
ESHS-360	Sustainable World Water Supply

Comics Studies

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Program overview

Explore the history of cartooning, comics, sequential art, and visual storytelling. Students learn about and analyze the history of the comics medium, the distinct formal qualities of sequential art, the relations between comics and other popular media forms, and how comics remain a vibrant contemporary cultural form.

Notes about this immersion:

- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Required Course	
ILLS-142	Comics: Image & Text in Popular Culture
Electives	
ENGL-314	Ethics in the Graphic Memoir
ENGL-421	The Graphic Novel
ILLS-342	Global Comics
ILLS-344	Popular Genre Studies in Comics and Related Media
ARTH-556	Art Comics
ARTH-392	Theory And Criticism of 20th Century Art
ARTH-521	The Image
COMM-341	Visual Communication
ENGL-318	Popular Literature
ENGL-373	Media Adaptation
VISL-376	Visual Culture Theory
VISL-388	Gender and Contemporary Art
MLFR-151	Film, Comics, and French Culture
PRFL-330	Performing Identity in Popular Media

Communication

Program overview

Advanced study of selected areas of communication, including an overview of the fields of persuasion, mass communications, public speaking, and small group communication. Students will understand and apply several modes of communication in academic, professional, and personal situations.

Notes about this immersion:

- This immersion is closed to students majoring in advertising and public relations or communication.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
*Choose three of the following:**	
COMM-201	Public Speaking
COMM-202	Mass Communications
COMM-223	Digital Design in Communication
COMM-253	Communication
COMM-302	Interpersonal Communication
COMM-303	Small Group Communication
COMM-304	Intercultural Communication
COMM-305	Persuasion
COMM-306	Rhetoric Of Race Relations
COMM-341	Visual Communication
COMM-342	Communication Law and Ethics
COMM-343	Technology-Mediated Communication
COMM-344	Health Communication
COMM-346	Global Media
COMM-356	Critical Practice in Social Media
COMM-357	Communication, Gender, and Media
COMM-503	Advanced Public Speaking

* At least one course must be taken at the 300-level or above.

Creative Writing

Program overview

A series of creative writing courses offers students a practical, theoretical, and historical understanding of the art and craft of writing nonfiction, fiction prose, and poetry, as well as experimenting in digital storytelling and interactive media. The immersion encourages students to use these skills and insights for interdisciplinary projects and the enrichment of their careers and personal lives.

Notes about this immersion:

- This immersion is closed to students majoring in English who have chosen a concentration in creative writing.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ENGL-211	Introduction to Creative Writing: Prose and Poetry
ENGL-212	Introduction to Creative Writing: Forms and Styles
ENGL-376	Experimental Writing
ENGL-386	World Building Workshop
ENGL-389	Digital Creative Writing Workshop
ENGL-390	Creative Writing Workshop
ENGL-392	Queer and Trans Creative Writing Workshop
ENGL-490	Advanced Creative Writing Workshop
ENGL-511	Advanced Topics in Creative Writing
ENGL-543	Game-Based Fiction Workshop

Criminal Justice

Program overview

The criminal justice immersion provides students with the appropriate foundation to analyze crime, crime control policy, and the role of the criminal justice system in the maintenance of order in society. Courses focus on the social definition and measurement of crime, a broad understanding of the causes of crime, and societal responses to crime through the police, courts, and corrections.

Notes about this immersion:

- This immersion is closed to students majoring in criminal justice.

Curriculum

COURSE	
Prerequisite	
CRIM-110	Introduction to Criminal Justice
Electives	
Choose three of the following:	
CRIM-210	Technology in Criminal Justice
CRIM-220	Corrections
CRIM-230	Juvenile Justice
CRIM-240	Law Enforcement in Society
CRIM-260	Courts
CRIM-275	Crime and Violence
CRIM-285	Minority Groups and the Criminal Justice System
CRIM-299	Crime, Justice and Ethics
CRIM-489	Major Issues in Criminal Justice

Cultural Anthropology

Program overview

Cultural anthropology is the study of culture, past and present, from a worldwide comparative perspective. As a disciplinary field, cultural anthropology attempts to provide insights on how human beings across the globe live and work and shape their cultural world in families, cities, societies, ethnic groups, nations, and networked solidarities through ideas, ideologies, beliefs, and values or world views. One of the goals of cultural anthropology is to promote understanding among peoples—an increasingly important venture in our vastly interconnected world communities.

Notes about this immersion:

- This immersion is closed to students majoring in sociology and anthropology who have chosen the cultural anthropology track.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-102	Cultural Anthropology*
ANTH-104	Language and Linguistics*
ANTH-105	Humans, Health, Technology
ANTH-210	Culture and Globalization
ANTH-220	Language and Culture: Introduction to Linguistic Anthropology
ANTH-235	Immigration to the U.S.
ANTH-244	Human Centered Design Queries: An Anthropological Approach
ANTH-245	Ritual and Performance
ANTH-246	Gender and Health
ANTH-260	Native North Americans
ANTH-265	Native Americans in Film
ANTH-270	Cuisine, Culture, and Power
ANTH-275	Global Islam
ANTH-295	Global Public Health
ANTH-301	Social and Cultural Theory
ANTH-302	Qualitative Research
ANTH-303	Statistics in the Social Sciences
ANTH-310	African Film
ANTH-325	Bodies and Culture
ANTH-328	Heritage and Tourism
ANTH-335	Culture and Politics in Latin America
ANTH-341	Global Addictions
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-365	Culture and Politics in the Middle East
ANTH-375	Native American Cultural Resources and Rights
ANTH-380	Nationalism and Identity
ANTH-385	Anthropology and History
ANTH-410	Global Cities
ANTH-425	Global Sexualities
ANTH-430	Visual Anthropology
ANTH-489	Topics in Anthropology
INGS-270	Cuisine, Culture, and Power
SOCI-246	Gender and Health
SOCI-295	Global Public Health
SOCI-301	Social and Cultural Theory
SOCI-302	Qualitative Research
SOCI-303	Statistics in the Social Sciences
SOCI-361	Sociology of Numbers

* Students may use credit for either ANTH-102 or ANTH-104 towards the immersion.

† ANTH-340 Divided Europe and ANTH-350 Global Economy and the Grassroots are courses offered only at one of the global RIT campuses (Croatia), and counts toward this immersion in Cultural Anthropology.

Dance

Program overview

The dance immersion provides you with an overview of dance by exploring its contemporary applications through experiential and academic methods. You will have the opportunity to actively experience, analyze, and participate in dance as an art form, exploration of movement, and as a means of creative and personal expression. The immersion requires you to complete a course focusing on world dance and cultures, which provides cultural perspectives and examine dance traditions and movement through historical, critical, artistic, and socio-cultural contexts.

Curriculum

COURSE	
Required Course	
PRFN-340	World Dance & Culture
Electives	
Choose two of the following:	
PRFN-240	Dance History
PRFN-243	Dance: Jazz
PRFN-244	Dance: Hip Hop
PRFN-246	Dance: Modern
PRFN-247	Dance: Ballet
PRFN-250	Choreography: Designing Movement
PRFN-341	Exploring Technology in Dance
PRFN-342	African Dance
PRFN-345	Movement Analysis and Visual Expression

Students must take PRFN-340 World Dance and Culture, one 200-level PRFN dance course, and one additional PRFN dance course from this list.

Deaf Leadership

Program overview

The Deaf leadership immersion provides students with an opportunity to explore aspects of community development and leadership with special emphasis on ethics, rhetoric, social media communication, intersectionality, current national and international trends, and accessible technology.

Notes about this immersion:

- This immersion is closed to students majoring in community development and inclusive leadership.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
Choose three of the following:	
LEAD-200	Dimensions of Ethical Community Leadership
LEAD-201	Shaping Educational and Legal Policy
LEAD-300	Rhetoric of Leadership
LEAD-301	Social Media Communication and Leadership
LEAD-303	Literatures of Intersectionality
LEAD-305	International Deaf Leadership and Community Development
LEAD-306	Leadership in the Deaf Community
LEAD-307	Leadership and Accessible Technology
LEAD-308	Current Trends in Community Development and Leadership

Digital Literatures and Comparative Media

Program overview

We encounter digital texts and codes every time we use a smart phone, launch an app, or interact online. This immersion explores innovative and evolving questions and practices of text and code in literature, creative writing, and interactive media. It invites students to explore the social, cultural, and technological significance of text, code, and their interrelations.

Notes about this immersion:

- This immersion is closed to students majoring in English who have chosen a concentration in literature and media.

Curriculum

COURSE	
Required Course	
ENGL-215	Text & Code
Electives	
Choose two of the following:	
ENGL-275	Storytelling: [Genre/Theme]
ENGL-315	Digital Literature
ENGL-373	Media Adaptation
ENGL-374	Games and Literature
ENGL-375	Storytelling Across Media
ENGL-376	Experimental Writing
ENGL-386	World Building Workshop
ENGL-414	Women and Gender in Literature and Media
ENGL-419	Literature and Technology
ENGL-422	Maps, Spaces and Places
ENGL-450	Free & Open Source Culture

Diversity in the U.S.

Program overview

This immersion offers students a variety of academic perspectives on how diverse groups may share cultural or inherited characteristics, and how perceptions of difference influence their interactions. Race, ethnicity, gender, and sexualities are the main points of focus. Students examine differential power between groups, analyze the social structures used to maintain, moderate and alter power relations, as well as probe interpersonal relationships across social divides.

Curriculum

COURSE	
Required Course	
SOCI-220	Minority Group Relations
Electives	
Choose two of the following:	
ANTH-235	Immigration to the U.S.
ANTH-244	Human Centered Design Queries: An Anthropological Approach
ANTH-246	Gender and Health (WI)
ANTH-260	Native North Americans
ANTH-361	Sociology of Numbers
ANTH-375	Native American Cultural Resources and Rights
ANTH-489	Topics in Anthropology *
COMM-304	Intercultural Communication
CRIM-285	Minority Groups and the Criminal Justice System
ENGL-414	Women and Gender in Literature and Media
FNRT-206	Queer Looks
SOCI-210	Black America-Culture & HipHop
SOCI-225	Social Inequality
SOCI-235	Women, Work, and Culture
SOCI-240	Deaf Culture in America
SOCI-246	Gender and Health (WI)
SOCI-300	Sociology of American Life
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-322	Health and Society (WI)
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-355	CyberActivism: Diversity, Sex, and the Internet (WI)
SOCI-361	Sociology of Numbers
SOCI-395	Borders:Humans, Boundaries, and Empires
SOCI-489	Topics in Sociology*

* Course may be used when topic is relevant to Diversity in the U.S

Diversity, Inclusion, and Dialogue

Program overview

Students in the diversity, inclusion, and dialogue immersion will study the social construct of diverse communities through examination of experiences of inequity, discrimination, oppression, and intersectionality. They will learn constructive dialogue techniques for use across a range of communities, with the goal of understanding diverse populations and their experiences.

Notes about this immersion:

- This immersion is closed to students majoring in community development and inclusive leadership.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Required Courses	
LEAD-203	Foundation of Dialogue: Black Deaf Experiences
LEAD-303	Literatures of Intersectionality
Electives	
Choose one of the following:	
LEAD-304	Conflict Resolution: Negotiation and Mediation
LEAD-309	Dialogue: Race and Ethnicity
LEAD-310	Dialogue: Gender
LEAD-311	Dialogue: Deaf, DeafBlind, DeafDisabled, Hard-of-Hearing
LEAD-312	Dialogue: LGBTQIA
LEAD-313	Dialogue: Social Class

Economics

Program overview

The economics immersion provides a systematic analysis of economic issues through the study of the allocation of scarce resources into production and the distribution of production among the members of society.

Notes about this immersion:

- This immersion is closed to students majoring in economics.

Curriculum

COURSE	
Prerequisites	
ECON-101	Principles of Microeconomics
ECON-101H	Honors Microeconomics
Electives	
Choose three of the following:	
ECON-201	Principles of Macroeconomics
ECON-401	Intermediate Microeconomic Theory
ECON-402	Intermediate Macroeconomic Theory
ECON-403	Econometrics I
ECON-404	Mathematical Methods: Economics
ECON-405	International Trade and Finance
ECON-406	Global Economic Issues
ECON-407	Industrial Organization
ECON-410	Game Theory with Economic Applications
ECON-411	Computational Economics
ECON-421	Natural Resource Economics
ECON-422	Benefit-Cost Analysis
ECON-430	Managerial Economics
ECON-431	Monetary Analysis and Policy
ECON-433	Financial Economics
ECON-441	Labor Economics
ECON-445	History of Economic Thought
ECON-448	Development Economics
ECON-450	Health Care Economics
ECON-453	Behavioral & Experimental Economics
ECON-520	Environmental Economics

Environmental Studies

Program overview

The environmental studies immersion is an examination of the basic environmental problems we face, how environmental resource depletion and energy issues are related, and what kind of environmental ethics and/or values we have today and have had in the past. The immersion also explores the economic, legislative, and regulatory framework within which most environmental decisions are made. Since most technological areas are associated with significant environmental implications, it is essential that students have an understanding of and a well-thought-out value orientation about such environmental consequences.

Notes about this immersion:

- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
Choose three of the following:	
HIST-345	Environmental Disasters
PUBL-530	Energy Policy
STSO-120	Introduction to Environmental Studies
STSO-220	Environment and Society
STSO-230	Foundations of Engagement and Community Transformation
STSO-321	Face of the Land
STSO-325	History of the Environmental Sciences
STSO-326	History of Ecology and Environmentalism
STSO-330	Energy and the Environment
STSO-335	Industry, Environment, and Community in Rochester
STSO-342	Gender, Science, and Technology
STSO-421	Environmental Policy
STSO-422	Great Lakes
STSO-425	Nature and Quantification
STSO-488	Topics in Environmental Studies
STSO-510	Interdisciplinary Capstone Seminar (WI)
STSO-521	Biodiversity and Society
STSO-550	Sustainable Communities

* At least one course must be taken at the 300-level or above.

Ethics

Program overview

The ethics immersion helps students to understand more deeply the nature of ethical thinking, to recognize and understand ethical dilemmas in private, professional, and public settings, and to think clearly and critically about possible answers to ethical problems. The immersion also provides students with the opportunity to acquaint themselves with some of the most influential writings and thinkers in the philosophical canon. Courses are especially well suited to students considering careers in law, medicine, business, or politics.

Notes about this immersion:

- This immersion is closed to students majoring in philosophy.
- Students are required to take either Foundations of Moral Philosophy (PHIL-202) or Ethical Theory (PHIL-415). If students take one of these courses, they will choose two elective courses to complete the immersion. If they choose both of these courses students will choose one additional elective.
- At least two courses must be at the 300 level or higher.

Curriculum

COURSE	
Required Course	
*Choose one of the following:**	
PHIL-202	Foundations of Moral Philosophy
PHIL-415	Ethical Theory
Electives	
Choose two of the following:†	
BIOL-255	Genetics and Society
CRIM-299	Crime, Justice and Ethics
DHSS-103	Ethics in the Digital Era
ECON-102	Economics, Ethics, and Society
ENGL-314	Ethics in the Graphic Memoir
ISEE-684	Engineering and the Developing World
ISTE-110	FYW: Ethics in Computing
MEDS-360	Placebo, Suggestion, Research and Health
MGMT-340	Business Ethics and Corporate Social Responsibility
NSSA-221	Systems Administration I
PHIL-102	Introduction to Moral Issues
PHIL-202	Foundation of Moral Philosophy
PHIL-304	Philosophy of Law
PHIL-305	Philosophy of Peace
PHIL-306	Professional Ethics
PHIL-308	Environmental Philosophy
PHIL-309	Feminist Theory
PHIL-311	East Asian Philosophy
PHIL-315	Responsible Knowing
PHIL-316	Bioethics and Society
PHIL-403	Social and Political Philosophy
PHIL-407	Philosophy of Action
PHIL-409	Existentialism
PHIL-415	Ethical Theory
PHIL-449	Topics in Philosophy ‡
PUBL-201	Ethics, Values & Public Policy
SOCI-225	Social Inequality

* Students may choose to complete both PHIL-202 and PHIL-405 towards the immersion, along with an additional elective.
† At least two courses must be at the 300 level or higher.
‡ Course may be used when the topic includes ethical issues.

Film Studies

Program overview

The film studies immersion allows students to engage in the study of global cinema using a variety of interdisciplinary methodologies and perspectives. Coming from the disciplines of English, anthropology, philosophy, fine arts/visual culture, political science, history, and modern languages, the immersion investigates cinema's mass appeal as a form of entertainment, but also the power it wields as a disseminator of ideas, history, values, aesthetics, behavior, and cultural norms.

Notes about this immersion:

- This immersion is closed to students majoring in film and animation.
- Students must take courses in more than one discipline, e.g., two in fine arts (FNRT) and one in anthropology (ANTH).

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-265	Native Americans in Film
ANTH-430	Visual Anthropology
ENGL-410	Film Studies
FNRT-200	Anime†
FNRT-372	American Film of the Studio Era†
HIST-275	Screening the Trenches: The History of WWI Through Film
HIST-450	Japan in History, Fiction, and Film
MLCH/WGST-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
MLFR-151	Film, Comics, and French Culture
MLFR-351	French Films and Hollywood
MLFR-352	The French Heritage in Films
MLIT-351	Italian Cinema from Neorealism to the New Millennium
MLSP-352	Caribbean Cinema
PHIL-313	Philosophy of Film
POLS-490	Politics Through Film
VISL-320	Contemporary Cinema: Fact and Fiction†
VISL-373	American Film Since the Sixties
VISL-440	Deaf Art & Cinema

* Students must take courses in more than one discipline, e.g., two in VISL and one in ANTH.

Free Culture and Free and Open Source Computing

Program overview

Business, the arts, the sciences, and the humanities now rely on work that is "open," work that is released in a manner that allows it to be shared, copied, and improved upon by its users. Open Source Software powers the internet and the World Wide Web, Open Data, and Open GIS mapping. All of these are at the core of most digital humanities projects. Creative Commons licenses allow artists, musicians, and writers to collaborate more freely by altering the "all on or all off" conditions of copyright. The Open Hardware of the Raspberry Pi and Arduino board drive the maker movement and interactive arts.

In the free culture and free and open source computing immersion, you'll will take one course in the culture, history, and ethics behind the Open IP movements listed above. You'll follow that by completing a course in Humanitarian Free and Open Source software to get hands-on experience contributing to open communities of practice and by learning first-hand how those communities thrive best when experts from many fields work together. Your third course will be chosen by you from a range of electives in communications, computing, technology, policy, or history, all of which can build your understanding and practice of open work.

Notes about this immersion:

- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Required Courses	
ENGL-450	Free & Open Source Culture
IGME-582	Humanitarian Free & Open Source Software Development
Electives	
Choose one of the following:	
COMM-303	Small Group Communication
COMM-304	Intercultural Communication
ENGL-215	Text & Code
ENGL-581	Intro to Natural Language Process
ISCH-201	Computing, Culture, and Society
STSO-201	Science and Technology Policy
STSO-230	Foundations of Engagement and Community Transformation
STSO-240	Social Consequences of Technology
STSO-246	History of Women in Science and Engineering

Gender and STEM Studies

Program overview

The gender and STEM studies immersion is an interdisciplinary set of courses that enable you to investigate, analyze, and critically question a range of issues at the crossing of gender (in its intersection with sexuality, race, class, and ethnicity) with the STEM fields.

By engaging cultural texts and productions from both historical and contemporary perspectives, you will analyze how gendered notions inform the content and context of the science, technology, and engineering fields. You will become skilled in:

- appraising how gendered assumptions relate to research methods, project designs, and practical applications in STEM fields;
- testing how a focus on gender might work to transform, enhance, and possibly innovatively (re)imagine scientific knowledge production as well as technology and engineering designs and applications; and
- prepare to address the challenges of enhancing gender diversity, participation, and fairness in the STEM professions and environments.

Curriculum

COURSE	
Required Course	
Choose one of the following:	
WGST-246	History of Women in Science and Engineering
WGST-282	Women, Gender, and Computing
WGST-342	Gender, Science, and Technology
Electives	
Choose two of the following:	
ANTH-246	Gender and Health
WGST-200	Foundations Of Women And Gender Studies*
WGST-205	Feminist Practices of Inquiry*
WGST-210	Introduction to LGBTQ+ Studies*
WGST-246	History of Women in Science and Engineering
WGST-282	Women, Gender, and Computing
WGST-342	Gender, Science, and Technology
WGST-357	Communication, Gender, and Media
WGST-399	Collaborative Learning Seminar in WGSS †
SOCI-246	Gender and Health
SOCI-355	CyberActivism: Diversity, Sex, and the Internet

* Only one course may be chosen between WGST-200, WGST-205, and WGST-210.
† When relevant to STEM studies.

Gender Equity, Social Institutions, and Public Affairs

Program overview

The gender equity, social institutions, and public affairs immersion equips you with the ability to view the social domain of public affairs, institutions, practices, and policies through a gendered lens and prepares you for future potential roles as advocates and leaders in the struggle toward gender equity and social justice at local, national, and global levels.

This immersion explores the influence of gender in its intersection with sexuality, ethnicity, nationality, race, class, and dis/ability within the social, institutional, and policy environment. You will learn to analyze domains of power within the economic, political, and social structures (including the family), identify gender inequities and inequalities, and evaluate and implement theories, methods, and practices for challenging gendered discrimination, increasing inclusiveness, imagining social justice, and improving lives and well-being at the individual and collective levels.

As gender is such a pervasive dimension of public life and policies, the immersion is beneficial to students in all major, especially those interested in promoting gender justice in the fields of sustainability and development; industry and transportation; economics and finance; human rights; the legal and judicial systems; health; international peace and security; and urban, environmental, and energy policies.

Notes about this immersion:

- Posting of the immersion on the student's academic transcript requires a minimum GPA of 2.0 in the immersion.
- Notations may appear in the curriculum chart below outlining prerequisites, co-requisites, and other curriculum requirements (see footnotes).

Curriculum

COURSE	
Required Course	
Choose one of the following:	
WGST-200	Foundations Of Women And Gender Studies
WGST-205	Feminist Practices of Inquiry
WGST-210	Introduction to LGBTQ+ Studies
Electives	
Choose two of the following:	
WGST-230	Men, Males, and Masculinities
WGST-235	Women, Work, and Culture
WGST-245	Prostitution and Vice
WGST-250	Domestic Violence
WGST-255	Seminar on Sexual Violence
WGST-265	Women and Crime
WGST-290	American Women's and Gender History
WGST-300	Feminist Leadership, Gender Equity and Empowerment
WGST-305	Feminist Activism for Gender Justice
WGST-318	Philosophies of Love,Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-335	Women and the Deaf Community
WGST-357	Communication, Gender, and Media
WGST-361	Queering Gender
WGST-399	Collaborative Learning Seminar in WGSS*
WGST-451	Economics of Women and the Family
WGST-481	Women in Politics

*When relevant to gender equity, social institutions, and public affairs

Gender, Art, and Media

Program overview

In the gender, art, and media immersion students explore how gender issues and identities, in their intersections with culture, race, ethnicity, nationality, social class, age, and (dis)abilities, are represented and portrayed in various artistic, literary, and media forms. By engaging with cultural texts and productions from both historical and contemporary perspectives, the immersion introduces students to critical analysis and knowledge-building methods drawn from fields such as women's and gender studies, feminist theories, critical race studies, queer studies, social justice work, and activism. The immersion teaches students to analyze gendered images as they appear in arts and media, recognize power inequalities and stereotypes in gender representations, and acquire the conceptual skills to critique and improve current conditions of artistic, literary, and media production and consumption in view of increased gender equity and fairness. The immersion complements any course of studies in a number of art and media-related fields such as art and literary criticism, art curation and exhibition, journalism and photojournalism, media studies, filmmaking, literature, photography, advertising and marketing, public relations, social services, and more.

Curriculum

COURSE	
Electives*	
Choose three of the following:	
WGST-200	Foundations Of Women And Gender Studies
WGST-205	Feminist Practices of Inquiry
WGST-206/VISL-206	Queer Looks
WGST-210	Introduction to LBGTQ+ Studies
WGST-309/PHIL-309	Feminist Theory
WGST-318/PHIL-318	Philosophies of Love, Sex, and Gender
WGST-330/PRFL-330	Performing Identity in Popular Media
WGST-351/MLSP-351	Gender and Sexuality in Hispanic Studies
WGST-352/MLCH-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
WGST-357/COMM-357	Communication, Gender, and Media
WGST-375/FNRT-375	Women/Gender/Art
WGST-383/VISL-383	Traumatic Images
WGST-384/VISL-384	Art of Dying
WGST-388/VISL-388	Gender and Contemporary Art
WGST-392/ENGL-392	Queer and Transgender Creative Writing Workshop
WGST-399	Collective Learning Seminar in WGSS (when relevant to gender, art, and media)
WGST-414/ENGL-414	Women and Gender in Literature and Media

* To ensure interdisciplinarity, only one course among WGST-200, WGST-205, and WGST-210 may be counted.

Geographic Information Systems

Program overview

As the world grows in complexity and interconnectedness, new challenges arise in visually representing, reasoning, and making sense of spatially-oriented problems and data. The geographic information systems immersion allows students to study geographic problem solving and scientific inquiry from an interdisciplinary perspective of interactive, digital mapping tools and related digital data problem solving technologies. Students are introduced to geographic mapping concepts and theory, digital cartography, geographic problem solving with geospatial and related computer tools, geospatial technology ethics and application of GIS to global problems such as natural disasters.

Notes about this immersion:

- This immersion is closed to students majoring in game design and development and new media interactive development.

Curriculum

COURSE	
Required Courses	
IGME-382	Maps, Mapping and Geospatial Technologies
IGME-384	Introduction to Geographic Information Systems
Electives	
Choose one of the following:	
ENGL-422	Maps, Spaces and Places
GCIS-123	Software Development and Problem Solving I
ISTE-230	Introduction to Database and Data Modeling
IGME-386	Spatial Algorithms and Problem Solving
IGME-484	Geographic Visualization
STSO-550	Sustainable Communities

Global Justice

Program overview

The global justice immersion examines attempts to create lasting peace and social justice on the international scale. Courses in philosophy and the social sciences help students to understand concepts of human rights, world poverty, and global solidarity. The immersion is well suited for students considering careers in law, politics, or public policy related fields.

Notes about this immersion:

- Students must select courses from at least two different disciplines.
- Students majoring in international and global studies, philosophy, political science, or sociology and anthropology must choose two of the three required courses from outside their respective major.

Curriculum

COURSE	
Electives	
*Choose three of the following:**	
ANTH-246/SOCI-246	Gender and Health
ANTH-345	Genocide and Transitional Justice
ANTH-375	Native American Cultural Resources and Rights
ANTH-425	Global Sexualities
PHIL-202	Foundations of Moral Philosophy
PHIL-304	Philosophy of Law
PHIL-305	Philosophy of Peace
PHIL-308	Environmental Philosophy
PHIL-309	Feminist Theory
PHIL-316	Bioethics and Society
PHIL-403	Social and Political Philosophy
PHIL-415	Ethical Theory
POLS-320	American Foreign Policy
POLS-440	War and the State
SOCI-235	Women, Work, and Culture
SOCI-295	Global Public Health

* Students must select their courses from at least two different disciplines.
† Philosophy, sociology and anthropology, international and global studies, and political science majors must choose two of the three immersion courses from outside their respective major.

Globalization Theory

Program overview

The immersion in globalization theory analyzes how linkages and interconnections across and beyond conventional borders and boundaries are forged by people, political regimes, social movements, corporate enterprise, and culture industries. The immersion's emphasis is on the causes, signs, and possibilities of globalization with view to mobile populations, permeable borders, transnational flows of capital, and the traffic of culture across space or historical time. Courses examine how global fluidities, mobilities, and connections have been forged, the various dynamic and unpredictable responses of people in diverse locations to global processes, and the implications of global processes for a shared future.

Notes about this immersion:

- This immersion is closed to students majoring in international and global studies.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-210	Culture and Globalization
ANTH-235	Immigration to the U.S.
ANTH-246	Gender and Health
ANTH-270	Cuisine, Culture, and Power
ANTH-295	Global Public Health
ANTH-310	African Film
ANTH-312	People Before Cities
ANTH-328	Heritage and Tourism
ANTH-341	Global Addictions
ANTH-345	Genocide and Transitional Justice
ANTH-360	Humans and Their Environment
ANTH-361	Sociology of Numbers
ANTH-410	Global Cities
ANTH-425	Global Sexualities
ANTH-430	Visual Anthropology
ANTH-489	Topics in Anthropology*
INGS-270	Cuisine, Culture and Power
SOCI-246	Gender and Health
SOCI-295	Global Public Health
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-322	Health and Society
SOCI-330	Urban (In)Justice
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
SOCI-361	Sociology of Numbers
SOCI-395	Borders: Humans, Boundaries, and Empires
SOCI-489	Topics in Sociology*

* Course may be used when the topic is relevant to Globalization Theory.

Health, Culture, and Society

Program overview

This immersion in health, culture, and society focuses on the shifting configurations of health and culture in a globalizing world. Health beliefs, including notions about bodily integrity or emotional well-being, illness causation, and diagnostic practices, and the experiences, expressions, and treatments of human ailments unfold in concrete cultural contexts. Every society has some form of health care system, which is minimally administered by community members or specialized practitioners. By moving beyond the lens of western biomedicine, the immersion provides students with a set of tools for analyzing the impact of culture on how health care is delivered, how health symptoms are interpreted and communicated by patients and health providers, and how costs for treatment are calculated and managed in relation to perceived benefits. Courses examine the interrelation between health and culture from a number of perspectives and contexts, including the cultural realities within which bodies are meaningfully constituted or in some cases enhanced by technology, the culture-specific communicative or representational health practices, the socially constituted experiences of trauma, death, suffering, and healing, and the various culturally mediated approaches to health care costs and remedies.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-105	Health, Humans, and Technology
ANTH-245	Ritual and Performance
ANTH-246	Gender and Health
ANTH-250	Themes in Archaeological Research*
ANTH-270	Cuisine, Culture, and Power
ANTH-295	Global Public Health
ANTH-325	Bodies and Culture
ANTH-341	Global Addictions
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-425	Global Sexualities
ANTH-435	The Archaeology of Death
ANTH-489	Topics in Anthropology †
COMM-344	Health Communication
CRIM-245	Prostitution and Vice
ECON-450	Health Care Economics
ENGL-330	Rhetoric of Health and Medicine
MLSP-353	Trauma and Survival in First-Person Narrative
PHIL-316	Bioethics and Society
PSYC-231	Death and Dying
SOCI-240	Deaf Culture in America
SOCI-246	Gender and Health
SOCI-295	Global Public Health
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-322	Health and Society
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-361	Sociology of Numbers
SOCI-395	Borders: Humans, Boundaries, and Empires
SOCI-489	Topics in Sociology †
STSO-341	Biomedical Issues: Science and Technology
STSO-441	Cyborg Theory: (Re)thinking the Human Experience in the 21st Century
VISL-383/WGST-383	Traumatic Images
VISL-384/WGST-384	Art of Dying

* Course may be used when topic focuses on Hunger and Health.
† Course may be used when topic is relevant to Health, Culture, and Society

History

Program overview

The history immersion provides students with intensive study within the discipline of history. Students may choose to structure their immersion broadly, by choosing a wide range of historical topics to study, or narrowly, by choosing a particular area to study, such as American, European, or Asian history.

Notes about this immersion:

- This immersion is closed to students majoring in history.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
*Choose three of the following:**	
HIST-101	Making History
HIST-102	Themes in US History
HIST-103	The City in History
HIST-104	Themes In European History
HIST-105	Themes in History†
HIST-125	Public History and Public Debate
HIST-140	History of the Modern Middle East
HIST-150	World History since 1500
HIST-160	History of Modern East Asia
HIST-170	Twentieth Century Europe
HIST-180	Information Revolution
HIST-190	American Women's and Gender History
HIST-201	Histories of Globalization
HIST-210	Culture and Politics in Urban Africa
HIST-221	Introduction to Public History
HIST-230	American Deaf History
HIST-238	History of Disability
HIST-240	Civil War America
HIST-242	The American Revolutionary Era
HIST-245	American Slavery and Freedom
HIST-250	Origins of U.S. Foreign Relations
HIST-251	Modern U.S. Foreign Relations
HIST-252	The United States and Japan
HIST-255	History of World War II
HIST-260	History of Premodern China
HIST-261	History of Modern China
HIST-265	History of Modern Japan
HIST-266	History of Premodern Japan
HIST-270	History of Modern France
HIST-275	Screening the Trenches: The History of WWI Through Film
HIST-280	History of Modern Germany
HIST-282	Women, Gender, and Computing
HIST-290	U.S. History Since 1945
HIST-301	Great Debates in US History
HIST-302	Topics in History
HIST-310	Global Slavery and Human Trafficking
HIST-322	Monuments and Memory
HIST-323	America's National Parks
HIST-324	Oral History
HIST-325	Museums and History
HIST-326	Digital History
HIST-330	Deafness and Technology
HIST-333	Diversity in the Deaf Community
HIST-335	Women and the Deaf Community
HIST-340	Rochester Reformers: Changing the World
HIST-345	Environmental Disasters
HIST-350	Terrorism, Intelligence, and War
HIST-351	The Vietnam War
HIST-355	The Holocaust: Event, History, Memory
HIST-360	A Global History of Baseball
HIST-365	Conflict in Modern East Asia
HIST-369	Histories of Christianity
HIST-370	Global History of Religions
HIST-380	International Business History
HIST-383	Technology and Global Relations in the American Century
HIST-390	Medicine & Public Health in American History
HIST-402	Special Seminar in History
HIST-421	Hands-on History
HIST-430	Deaf Spaces

COURSE	
HIST-431	Theory and Methods of Deaf Geographies
HIST-439	Biography as History
HIST-450	Japan in History, Fiction and Film
HIST-462	East-West Encounters
HIST-465	Samurai in Word and Image
HIST-470	Science, Tech, & European Imperialism: 1800-1965
HIST-480	Global Information Age

* At least one course must be taken at the 300-level or above.
† HIST-105 is used to transfer in courses of AP exam scores and while the course is repeatable, it can only count once in the immersion.

Human Language Technology and Computational Linguistics

Program overview

The human language technology and computational linguistics immersion provides exposure to computational linguistics and relevant language science course work. Students gain knowledge and practical skills in computational natural language processing and technical linguistic analysis, useful for analytics and modeling with language data and for developing, evaluating, and maintaining language technology software.

Notes about this immersion:

- This immersion is closed to students majoring in English who have chosen a concentration in linguistics.

Curriculum

COURSE	
Required Course	
LING-581	Natural Language Processing I
Electives	
Choose two of the following:	
LING-214	Introduction to Linguistics
LING-301	Psycholinguistics
LING-351	Language Technology
LING-548	Undergraduate Speech Processing
LING-582	Natural Language Processing II
PSYC-431	Language and Thought

International Relations

Program overview

The international relations immersion combines the study of the complexities and shifting trends of international politics with the study of the global system. Particular emphasis is placed on the interactions and interconnectedness of nation-states at the international level and other participants in international affairs, such as international organizations, non-governmental organizations, sub-national entities, and individual citizens. Global issues studied include democratization, international and regional conflicts, terrorism, international trade and economic integration, economic development, international law and organizations, and human rights.

Notes about this immersion:

- This immersion is closed to students majoring in political science.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
*Choose three of the following:**	
POLS-205	Ethics in International Politics
POLS-210	Comparative Politics
POLS-215	Tech, Ethics & Global Politics
POLS-220	Global Political Economy
POLS-280	Artificial Intelligence and the Political Good
POLS-285	Environmental Ethics and Political Ecology
POLS-320	American Foreign Policy
POLS-325	International Law and Organizations
POLS-330	Human Rights in Global Perspective
POLS-335	Politics in Developing Countries
POLS-350	Politics of East Asia
POLS-351	Politics of China
POLS-360	International Political Thought
POLS-370	Cyberwar, Robots, & the Future of Conflict
POLS-375	Grand Strategy
POLS-390	Greece and the Political Imagination
POLS-390H	Greece and the Political Imagination
POLS-410	Evolutionary International Relations
POLS-440	War and the State
POLS-445	Terrorism and Political Violence
POLS-455	Comparative Public Policy
POLS-541	Peacekeeping and Conflict Transformation
POLS-542	War, Diplomacy, and State-Building

* At least one course must be taken at the 300-level or higher.

Journalism

Program overview

The journalism immersion provides opportunities for the advanced study of selected areas of journalism, including its history and relevant legal and ethical issues, and for education and practice in writing and editing skills required of journalists.

Notes about this immersion:

- This immersion is closed to students majoring in journalism.

Curriculum

COURSE	
Electives	
Choose three of the following:	
COMM-261	History of Journalism
COMM-263	Data Journalism
COMM-271	Introduction to Journalism
COMM-272	Reporting and Writing I
COMM-280	Community Journalism
COMM-291	Communication for Social Change
COMM-342	Communication Law and Ethics
COMM-370	Ethnic Press in the United States
COMM-374	Opinion Media

Language Science

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Program overview

The language science immersion prepares students in the interdisciplinary scientific study and analysis of human language. Language science is directly applicable to students interested in computing and media, human-computer interaction, brain and cognition, language acquisition, human health, interpreting, relevant branches of engineering, and policy studies. Students can complete the immersion irrespective of their skills in languages other than English. Besides a core course on linguistic principles, students choose electives covering the technology of language, philosophy of language, and language in culture and society. Electives allow students to customize the immersion to their interests and needs, with the support of a faculty adviser.

Notes about this immersion:

- This immersion is closed to students majoring in English who have chosen a concentration in linguistics.

Curriculum

COURSE	
Required Course	
Choose one of the following:	
LING-214	Introduction to Linguistics
Electives	
Choose two of the following:	
ANTH-220	Language and Culture: Introduction to Linguistic Anthropology
LING-351	Language Technology
LING-356	Meaning in Language
ENGL-370	Evolving English Language
ENGL-482	Speech Processing I
LING-581	Natural Language Processing I
LING-582	Natural Language Processing II
MLAS-351	Linguistics Of American Sign Language
LING-301	Psycholinguistics
LING-302	Introduction to Syntax
MLJP-351	Languages in Japanese Society
MLJP-451	Structure of the Japanese Language
MLST-449	Special Topic Modern Lng*
PHIL-414	Philosophy of Language

* This course may be used when the topic focuses on linguistics.

Latino/Latina/Latin American Studies

Program overview

The Latino/Latina/Latin American studies immersion allows students to study Latino or Latin American culture. The goal is to introduce students to the customs and culture (history, art, literature, politics, anthropology, music) of Latin America or of Latinos in the U.S. Students become aware of the relationship between language and culture, and of the differences between their own language and culture and those of Spanish-speaking countries or Brazil.

Notes about this immersion:

- This immersion is closed to native speakers of Spanish, students majoring in applied modern language and culture who have chosen the Spanish language track, and students majoring in international and global studies who have chosen a focus area on Spanish or Portuguese language or Latin American studies.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.
- This immersion consists of three culture courses. If a student chooses, one of the three courses may be substituted for a Spanish or Portuguese language course. Students who have prior study of either language must take a placement exam through the department of modern languages to determine the appropriate level language course to complete.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-235	Immigration to the U.S.
ANTH-255	Regional Archaeology*
ANTH-335	Culture and Politics in Latin America
ANTH-350	The Global Economy and the Grassroots
ARTH-561	Latin American Art
ARTH-572	Art of the Americas
MLPO-201	Beginning Portuguese I
MLPO-202	Beginning Portuguese II
MLPO-301	Intermediate Portuguese I
MLPO-302	Intermediate Portuguese II
MLPO-401	Advanced Portuguese I
MLPO-402	Advanced Portuguese II
MLSP-201A	Beginning Spanish IA
MLSP-201B	Beginning Spanish IB
MLSP-202	Beginning Spanish II
MLSP-301	Intermediate Spanish I
MLSP-302	Intermediate Spanish II
MLSP-305	Spanish for Health Care
MLSP-310	Spanish Grammar Review
MLSP-315	Hispanic Culture & Civilization
MLSP-351	Gender and Sexuality in Hispanic Studies
MLSP-352	Caribbean Cinema
MLSP-353	Trauma and Survival in First-Person Narrative
MLSP-401	Advanced Spanish I
MLSP-402	Advanced Spanish II
SOCI-395	Borders: Humans, Boundaries, and Empires

* This course may be used when the topic focuses on Mesoamerica or Latin America.

Legal Studies

Program overview

The legal studies immersion provides students with a foundation in the study of law and legal institutions, and in the relationship of law to other aspects of society and culture. Courses provide a broad perspective on law and legal institutions including historical, ethical, sociological, political, and philosophical approaches to these areas.

Notes about this immersion:

- Students must complete three courses as part of the immersion, however all three courses cannot come from the same discipline. Students majoring in communication, criminal justice, philosophy, and political science must choose two of the three courses from outside their respective major.

Curriculum

COURSE	
Required Course	
Choose one of the following:	
CRIM-215	Law and Society
POLS-200	Law & Society
Electives	
Choose two of the following:	
COMM-342	Communication Law and Ethics
CRIM-225	Criminal Law
CRIM-260	Courts
CRIM-315	Evidence
PHIL-205	Symbolic Logic
PHIL-304	Philosophy of Law
PHIL-403	Social and Political Philosophy
POLS-325	International Law and Organizations
POLS-330	Human Rights in Global Perspective
POLS-425	Constitutional Law
POLS-430	Constitutional Rights and Liberties
POLS-460	Classical Constitutionalism, Virtue & Law
POLS-465	Modern Constitutionalism, Liberty & Equality

* Students must not take all three courses for the Immersion from a single discipline.

Linguistic Anthropology

Program overview

Language is a fundamental property of being human. Linguistics, the study of human language, is one of the four branches of anthropology. Linguistic anthropology explores the dynamic interrelationships among language, culture, and society, how human beings make sense of the world, and participate in social life through creative speech acts and linguistic play. Courses familiarize students with a range of theoretical and analytic approaches, including general linguistics, sociolinguistics, theories of languages, communication, semiotics, and literary studies.

Curriculum

COURSE	
Electives	
Chooses three of the following:	
ANTH-104	Language and Linguistics
ANTH-220	Language and Culture: Introduction to Linguistic Anthropology
ANTH-312	People Before Cities
ANTH-361	Sociology of Numbers
ANTH-375	Native American Cultural Resources and Rights
ANTH-489	Topics in Anthropology*
COMM-304	Intercultural Communication
PHIL-414	Philosophy of Language
SOCI-361	Sociology of Numbers

*Course may be used when topic is relevant to linguistic anthropology.

Literature and Media

Program overview

Study literature and other cultural works, as well as linguistics, and creative writing. The immersion is flexible in order to accommodate student interest in areas such as specific literary historical periods or geographic areas, multimedia and the visual arts, or literary genres and forms such as science fiction, the novel, the short story, poetry. Courses in the immersion emphasize the ability to read literature and other mediums analytically and write critically.

Notes about this immersion:

- This immersion is closed to students majoring in English who have chosen a concentration in literature and media.

Curriculum

COURSE	
Choose one of the following:	
ENGL-210	Literature and Cultural Studies
ENGL-275	Storytelling: [Genre/Theme]
Choose two of the following:	
ENGL-301	The Art of Poetry
ENGL-302	The Short Story
ENGL-304	Drama and Theatre
ENGL-307	Mythology & Literature
ENGL-308	Shakespeare Drama
ENGL-309	Topics in Literary Forms
ENGL-312	American Literature
ENGL-313	British Literature
ENGL-315	Digital Literature
ENGL-316	Global Literature
ENGL-318	Popular Literature
ENGL-322	Literary Geographies
ENGL-345	History of Madness
ENGL-370	Evolving English Language
ENGL-373	Media Adaptation
ENGL-375	Storytelling Across Media
ENGL-377	Transmedia Storyworlds
ENGL-391	Dangerous Texts
ENGL-410	Film Studies
ENGL-413	African-American Literature
ENGL-414	Women and Gender in Literature and Media
ENGL-418	Great Authors
ENGL-420	Science Fiction

Mathematics

Program overview

Notes about this immersion:

- This immersion is closed to students majoring in applied mathematics and computational mathematics.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Prerequisites	
One of the following:	
MATH-181	Calculus I
MATH-181A	Calculus I
MATH-171/172	Calculus A/B
Plus one of the following:	
MATH-182	Calculus II
MATH-182A	Calculus II
MATH-173	Calculus C
MATH-190	Discrete Mathematics for Computing
MATH-200	Discrete Mathematics and Introduction to Proofs
Electives*	
Choose three of the following:	
MATH-219	Multivariable Calculus†
MATH-221	Multivariable and Vector Calculus†§
MATH-221H	Honors Multivariable and Vector Calculus
MATH-231	Differential Equations‡
MATH-233	Linear Systems and Differential Equations‡
MATH-241	Linear Algebra§
MATH-241H	Honors Linear Algebra
MATH-251	Probability and Statistics I
MATH-301	Mathematics of Simulation
MATH-311	Linear Optimization
MATH-312	Nonlinear Optimization
MATH-321	Game Theory
MATH-322	Combinatorial Game Theory
MATH-326	Boundary Value Problems
MATH-331	Dynamical Systems
MATH-341	Advanced Linear Algebra
MATH-351	Graph Theory
MATH-361	Combinatorics
MATH-367	Codes and Ciphers
MATH-367H	Honors Codes and Ciphers
MATH-381	Complex Variables
MATH-371	Number Theory
MATH-411	Numerical Analysis
MATH-412	Numerical Linear Algebra
MATH-431	Real Variables I
MATH-432	Real Variables II
MATH-441	Abstract Algebra I
MATH-442	Abstract Algebra II
MATH-461	Topology
MATH-505	Stochastic Processes

* At least one course must be taken at the 300-level or above.
† Students may choose one of these courses, but not both
‡ Students may choose one of these courses, but not both
§ This course has honors-designated sections taught occasionally.

Modern Languages and Cultures – Arabic

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Program overview

This immersion introduces students to the language, customs, and cultural aspects (history, art, literature, politics, anthropology, and music) of Arabic-speaking countries. The immersion consists of three language courses or two language courses and one culture course. Students with previous language skills must consult the minor adviser for placement evaluation before they register for language courses.

Notes about this immersion:

- This immersion is closed to students majoring in international and global studies who have chosen an area of study in Arabic language, a field specialization in the Middle East, or are native speakers of Arabic.

Curriculum

COURSE	
Electives	
Choose two or three consecutive language courses:	
MLAR-201	Beginning Arabic I
MLAR-202	Beginning Arabic II
MLAR-301	Intermediate Arabic I
MLAR-302	Intermediate Arabic II
MLAR-401	Advanced Arabic I
MLAR-402	Advanced Arabic II
One culture course may be taken in place of one language course:	
ANTH-275	Global Islam
ANTH-365	Culture and Politics in the Middle East
ANTH-449	Topics in Arabic

Modern Languages and Cultures – Chinese

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Program overview

This immersion introduces students to the language, customs, and cultural aspects (history, art, literature, politics, anthropology, and music) of Chinese-speaking countries. The immersion consists of three language courses or two language courses and one culture course. Students with previous language skills must consult the minor adviser for placement evaluation before they register.

Notes about this immersion:

- This immersion is closed to students majoring in applied modern language and culture who have chosen the Chinese language track; majoring in international and global studies who have chosen an area of study in Chinese language, a field specialization in Asia; or are native fluent speakers of Chinese.

Curriculum

COURSE	
Electives	
Choose two or three consecutive language courses:	
MLCH-201	Beginning Chinese I
MLCH-202	Beginning Chinese II
MLCH-301	Intermediate Chinese I
MLCH-302	Intermediate Chinese II
MLCH-310	Intermediate Conversational Chinese
MLCH-315	Intermediate Reading and Writing in Chinese
MLCH-401	Advanced Chinese I
MLCH-402	Advanced Chinese II
MLCH-410	Chinese for Science and Technology
MLCH-415	Professional Chinese
One culture course may be used in place of one language course:	
ANTH-255	Regional Archaeology*
HIST-260	History of Premodern China
HIST-261	History of Modern China
HIST-365	Conflict in Modern East Asia
MLCH-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
PHIL-311	East Asian Philosophy
POLS-350	Politics of East Asia
POLS-351	Politics of China

* This course may be used when the topic focuses on East Asia

Modern Languages and Cultures – French

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Program overview

This immersion introduces students to the language, customs, and cultural aspects (history, art, literature, politics, anthropology, and music) of French-speaking countries. The immersion consists of three language courses or two language courses and one culture course. Students with previous language skills must consult the minor adviser for placement evaluation before they register.

Notes about this immersion:

- This immersion is closed to students majoring in international and global studies who have chosen an area of study in French language, a field specialization in Europe, or are native speakers of French.

Curriculum

COURSE	
Electives	
Choose two or three consecutive language courses:	
MLFR-201	Beginning French I
MLFR-202	Beginning French II
MLFR-301	Intermediate French I
MLFR-302	Intermediate French II
MLFR-310	French Oral Communication
MLFR-315	French Reading and Writing Proficiency
MLFR-401	Introduction to Modern French Society
MLFR-402	French Speaking Cultures
MLFR-410	French for Science and Technology
MLFR-415	Professional French
One culture course may be used in place of one language course:	
ARTH-364	Art in Paris
HIST-270	History of Modern France
HIST-275	Screening the Trenches: A History of WWI Through Film
HIST-470	Science, Tech, & European Imperialism: 1800-1965
MLFR-351	French Films and Hollywood
MLFR-352	The French Heritage in Films

Modern Languages and Cultures – German

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Program overview

This immersion introduces students to the language, customs, and cultural aspects (history, art, literature, politics, anthropology, and music) of German-speaking countries. The immersion consists of three language courses or two language courses and one culture course. Students with previous language skills will begin the language courses at their current level of proficiency as determined by a placement test.

Notes about this immersion:

- This immersion is closed to students majoring in international and global studies who have chosen an area of study in German language, a field specialization in Europe, or are native speakers of German.

Curriculum

COURSE	
Electives	
Choose two or three consecutive language courses:	
MLGR-201	Beginning German I
MLGR-202	Beginning German II
MLGR-301	Intermediate German I
MLGR-302	Intermediate German II
MLGR-310	German Conversation and Oral Practice
MLGR-315	German Grammar through Reading and Writing
MLGR-401	Advanced German I
MLGR-402	Advanced German II
MLGR-410	German for Science and Technology
MLGR-415	Professional German
One culture course may be used in place of one language course:	
FNRT-210	Bach, Händel, and the Baroque
FNRT-211	Era of Haydn, Mozart, & Beethoven
HIST-280	History of Modern Germany
MLGR-351	Modern German Culture through Film
PHIL-417	Continental Philosophy

Modern Languages and Cultures – Italian

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Program overview

This immersion introduces students to the language, customs, and cultural aspects (history, art, literature, politics, anthropology, and music) of Italy. The immersion consists of three language courses or two language courses and one culture course. Students with previous language skills must consult the minor adviser for placement evaluation before they register.

Notes about this immersion:

- This immersion is closed to students majoring in international and global studies who have chosen an area of study in Italian language, a field specialization in Europe, or are native speakers of Italian.

Curriculum

COURSE	
Electives	
Choose two or three consecutive language courses:	
MLIT-201	Beginning Italian I
MLIT-202	Beginning Italian II
MLIT-301	Intermediate Italian I
MLIT-302	Intermediate Italian II
MLIT-401	Advanced Italian I
MLIT-402	Advanced Italian II
One culture course may be used in place of one language course:	
ARTH-311	Art and Architecture of Italy: 1250-1400
ARTH-312	Art and Architecture of Italy: 1600-1750
ARTH-317	Art and Architecture in Florence and Rome: 15th Century
ARTH-318	Art and Architecture in Florence and Rome: 16th Century
MLIT-351	Italian Cinema from Neorealism to the New Millennium

Modern Languages and Cultures – Japanese

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Program overview

This immersion introduces students to the language, customs, and cultural aspects (history, art, literature, politics, anthropology, and music) of Japan. The immersion consists of three language courses or two language courses and one culture course. Students with previous language skills must consult the minor advisor for placement evaluation before they register.

Notes about this immersion:

- This immersion is closed to students majoring in applied modern language and culture who have chosen the Japanese language track; majoring in international and global studies who have chosen an area of study in Japanese language, a field specialization in Asia; or who are fluent native speakers of Japanese.

Curriculum

COURSE	
Electives	
Choose two or three consecutive language courses:	
MLJP-201	Beginning Japanese I
MLJP-202	Beginning Japanese II
MLJP-301	Intermediate Japanese I
MLJP-302	Intermediate Japanese II
MLJP-401	Advanced Japanese I
MLJP-402	Creative Writing and Performance in Japanese
MLJP-405	Advanced Speaking in Japanese
One culture course may be used in place of one language course:	
ANTH-255	Regional Archaeology*
FNRT-200	Anime
HIST-160	History of Modern East Asia
HIST-252	The United States and Japan
HIST-265	History of Modern Japan
HIST-266	History of Premodern Japan
HIST-450	Japan in History, Fiction and Film
HIST-465	Samurai in Word and Image
MLJP-310	Practical Reading and Speaking in Japanese
MLJP-315	Practical Writing and Speaking in Japanese
MLJP-351	Languages in Japanese Society
MLJP-404	Japanese Culture in Print
MLJP-410	Japanese for Science and Technology
MLJP-415	Professional Japanese
MLJP-451	Structure of the Japanese Language
PHIL-311	East Asian Philosophy
POLS-350	Politics of East Asia

* This course may be used when the topic focuses on East Asia.

Modern Languages and Cultures – Portuguese

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Program overview

This immersion introduces students to the language, customs, and cultural aspects (history, art, literature, politics, anthropology, and music) of Portugal and Portuguese-speaking countries. The immersion consists of three language courses or two language courses and one culture course. Students with previous language skills must consult the minor advisor for placement evaluation before they register.

Notes about this immersion:

- This immersion is closed to students majoring in international and global studies who have chosen an area of study in Portuguese language, a field specialization in Latin America or Europe, or are fluent native speakers of Portuguese.

Curriculum

COURSE	
Electives	
Choose two or three consecutive language courses:	
MLPO-201	Beginning Portuguese I
MLPO-202	Beginning Portuguese II
MLPO-301	Intermediate Portuguese I
MLPO-302	Intermediate Portuguese II
MLPO-401	Advanced Portuguese I
MLPO-402	Advanced Portuguese II
One culture course may be used in place of one language course:	
ANTH-335	Culture and Politics in Latin America

Modern Languages and Cultures – Russian

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Program overview

This immersion introduces students to the language, customs, and cultural aspects (history, art, literature, politics, anthropology, and music) of Russia and Russian-speaking countries of the world. The immersion consists of three language courses or two language courses and one culture course. Students with previous language skills must consult the minor advisor for placement evaluation before they register.

Notes about this immersion:

- This immersion is closed to students majoring in international and global studies who have chosen an area of study in Russian language or are native speakers of Russian.

Curriculum

COURSE	
Electives	
Choose two or three consecutive language courses:	
MLRU-201	Beginning Russian I
MLRU-202	Beginning Russian II
MLRU-301	Intermediate Russian I
MLRU-302	Intermediate Russian II
MLRU-305	Intermediate Conversation and Intercultural Communication in Russian
MLRU-401	Advanced Russian I
MLRU-402	Advanced Russian II
One culture course may be used in place of one language course:	
ENGL-416	Topics in Global Literature*
ENGL-418	Great Authors*
MLRU-405	Russian Language & Culture through Media

* This course may be used when the topic focuses on Russian Literature.

Modern Languages and Cultures – Spanish

Diane Forbes, Immersion Advisor
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Program overview

This immersion introduces students to the language, customs, and cultural aspects (history, art, literature, politics, anthropology, and music) of Spain and Spanish-speaking countries. The immersion consists of three language courses or two language courses and one culture course. Students with previous language skills must consult the minor adviser for placement evaluation before they register.

Notes about this immersion:

- This immersion is closed to students majoring in international and global studies who have chosen an area of study in Spanish language, majoring in applied modern language and culture who have chosen the Spanish language track, or students who are fluent native speakers of Spanish.

Curriculum

COURSE	
Electives	
Choose two or three consecutive language courses:	
MLSP-201A	Beginning Spanish IA†
MLSP-201B	Beginning Spanish IB†
MLSP-202	Beginning Spanish II
MLSP-301	Intermediate Spanish I
MLSP-302	Intermediate Spanish II
MLSP-305	Spanish for Health Care
MLSP-310	Spanish Grammar Review
MLSP-315	Hispanic Culture & Civilization
MLSP-401	Advanced Spanish I
MLSP-402	Advanced Spanish II
MLSP-410	Spanish for Science and Technology
MLSP-415	Professional Spanish
One culture course may be used in place of one language course	
ANTH-235	Immigrating to the U.S.
ANTH-255	Regional Archaeology‡
ANTH-335	Culture and Politics in Latin America
ANTH-350	The Global Economy and the Grassroots
ARTH-561	Latin American Art
ARTH-572	Art of the Americas
ENGL-418	Great Authors*
MLSP-351	Gender and Sexuality in Hispanic Studies
MLSP-352	Caribbean Cinema
MLSP-353	Trauma and Survival in First-Person Narrative
SOCI-395	Borders:Humans, Boundaries, and Empires

* When the course deals with Spanish and/or Latin American literature.
† Based on a student's previous study of the Spanish language, students may enroll in either Beginning Spanish IA (MLSP-201A) or Beginning Spanish IB (MLSP-201B).
‡ This course may be used when the topic focuses on Mesoamerica or Latin America.

Museum Studies

Program overview

The immersion in museum studies introduces students to the history, theory, and practice of institutional collecting, exhibiting, storing, and preserving our cultural heritage in museums, archives, collections, galleries, and libraries. It also provides students with an introduction to public history, the technical investigation of art, the history and theory of exhibitions, and interactive design for museums.

Notes about this immersion:

- This immersion is closed to students majoring in museum studies.
- Students must take at least one museum studies (MUSE) course and one history (HIST) course. The third course may be taken from either discipline.

Curriculum

COURSE	
Electives	
Choose three of the following:	
HIST-322	Monuments and Memory
HIST-323	America's National Parks
HIST-324	Oral History
HIST-325	Museums and History
MUSE-220	Introduction to Museums
MUSE-221/HIST-221	Introduction to Public History
MUSE-224	History & Theory of Exhibitions
MUSE-225	Museums & the Digital Age
MUSE-226	Introduction to Digital Cultural Heritage
MUSE-241	Topics in Museum Studies: Art, Design & Exhibition Projects
MUSE-244	Topics in Museum Studies: Museums and Society
MUSE-249	Topics in Archives, Museums, and Community Collections
MUSE-341	Museum Education & Interpretation
MUSE-360	Visitor Engagement & Museum Technologies
MUSE-361	Tablet to Tablet: A History of Books
MUSE-388/VISL-388	Gender and Contemporary Art

* Students must complete one course from the "MUSE" discipline and one course from the "HIST" discipline. The third course can be taken from either discipline.

Music

Program overview

The immersion in music offers courses in the history, theory, and practice of music. Students with a background in music and/or a genuine desire to know more about the subject will have the opportunity to expand their knowledge of various theoretical and historical aspects, as well as participate in performing groups at RIT.

Notes about this immersion:

- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives:	
Choose three of the following:	
FNRT-202	Music & Global Cultures
FNRT-203	American Popular & Rock Music
FNRT-204	Music & the Stage
FNRT-205	Music Theory 1
FNRT-209	Medieval and Renaissance Music
FNRT-210	Bach, Handel, and the Baroque
FNRT-211	Era of Haydn, Mozart, & Beethoven
FNRT-250	RIT Singers*
FNRT-251	RIT Orchestra*
FNRT-252	RIT Concert Band*
FNRT-253	World Music Ensemble*
FNRT-254	RIT Jazz Ensemble*
FNRT-255	RIT Chamber Orchestra*
FNRT-320	Music of the Romantic Era
FNRT-321	Music Since 1900
FNRT-322	Survey of Jazz
FNRT-485	Music Theory 2
PRFL-250	Music History 1: Antiquity to Bach
PRFL-251	Music History 2: Haydn to Stravinsky
PRFL-327	American Musical Theater
PRFL-352	Russian Music and National Identity
SOIS-240	The Harmonica & the Blues

* Each of these ensembles is one semester credit hour. Three semesters of participation are required to complete one immersion course.
† At least one course must be taken at the 300-level or above.

Philosophy

Program overview

The philosophy immersion provides students with an opportunity to study the nature, methods, problems, and achievements of philosophical inquiry. The immersion emphasizes the following goals: the ability to think rationally and critically, an awareness of ethical values, an appreciation of aesthetic values, an awareness of how the past affects the present and future, and an understanding of the relationship between individuals and the social settings with which they interact.

Notes about this immersion:

- This immersion is closed to students majoring in philosophy.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
Choose three of the following:	
PHIL-201	Ancient Philosophy
PHIL-202	Foundations of Moral Philosophy
PHIL-203	Modern Philosophy
PHIL-205	Symbolic Logic
PHIL-301	Philosophy of Religion
PHIL-303	Philosophy of Art/Aesthetics
PHIL-304	Philosophy of Law
PHIL-305	Philosophy of Peace
PHIL-306	Professional Ethics
PHIL-307	Philosophy of Technology
PHIL-308	Environmental Philosophy
PHIL-309	Feminist Theory
PHIL-310	Theories of Knowledge
PHIL-311	East Asian Philosophy
PHIL-312	American Philosophy
PHIL-313	Philosophy of Film
PHIL-314	Philosophy of Vision and Imaging
PHIL-315	Responsible Knowing
PHIL-316	Bioethics and Society
PHIL-317	Renaissance Philosophy
PHIL-318	Philosophies of Love, Sex, and Gender
PHIL-401	Great Thinkers
PHIL-402	Philosophy of Science
PHIL-403	Social and Political Philosophy
PHIL-404	Philosophy of Mind
PHIL-405	Philosophy of the Social Sciences
PHIL-406	Contemporary Philosophy
PHIL-407	Philosophy of Action
PHIL-408	Critical Social Theory
PHIL-409	Existentialism
PHIL-410	Medieval Philosophy
PHIL-411	Metaphysics
PHIL-412	Nineteenth Century Philosophy
PHIL-413	Philosophy of Literature
PHIL-414	Philosophy of Language
PHIL-415	Ethical Theory
PHIL-416	Seminar in Philosophy
PHIL-417	Continental Philosophy
PHIL-449	Topics in Philosophy
PHIL-571	Honors Philosophy

* At least one course must be taken at the 300-level or above.

Physics

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Program overview

In a broad sense, the aim of physics is to develop interconnected unifying threads bridging the vast number of seemingly diverse phenomena observed in the physical world around us. This immersion provides students with the opportunity for additional study in physics in order to build a secondary area of expertise in support of their major or other areas of interest.

Notes about this immersion:

- This immersion is closed to students majoring in physics.

Curriculum

COURSE	
Prerequisites	
MATH-181	Calculus I
MATH-182	Calculus II
PHYS-211	University Physics I
PHYS-212	University Physics II
Required Courses	
PHYS-213	Modern Physics I*
PHYS-214	Modern Physics II
Electives†	
Choose one of the following:	
PHYS-283	Vibrations and Waves
PHYS-315	Experiments in Modern Physics
PHYS-320	Mathematical Methods in Physics
PHYS-330	Classical Mechanics
PHYS-411	Electricity and Magnetism
PHYS-414	Quantum Mechanics
PHYS-440	Thermal and Statistical Physics

* If PHYS-213 is a program requirement it must be replaced. PHYS-283 or any other course listed above are suitable replacements.
† At least one course must be completed at the 300-level or above.

Political Science

Program overview

The political science immersion emphasizes the interdependence of domestic politics and international relations in the age of globalization. The immersion brings together components of American politics, international relations, and comparative politics to provide students with both national and global perspectives on politics. Perhaps most important, the political science immersion seeks to help students make sense of the increasingly complicated political environment that confronts them in their role as citizens.

Notes about this immersion:

- This immersion is closed to students majoring in political science.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
*Choose three of the following courses:**	
American Politics	
POLS-200	Law & Society
POLS-250	State & Local Politics
POLS-280	Artificial Intelligence and the Political Good
POLS-290	Politics and the Life Sciences
POLS-295	Cyberpolitics
POLS-300	Rhetoric & Political Deliberation
POLS-305	Political Parties and Voting
POLS-310	The Congress
POLS-315	The Presidency
POLS-320	American Foreign Policy
POLS-340	Medicine, Morality, and Law
POLS-345	Politics and Public Policy
POLS-355	Political Leadership
POLS-365	Anarchy, Technology & Utopia
POLS-415	Evolution and the Law
POLS-420	Primate Politics
POLS-425	Constitutional Law
POLS-430	Constitutional Rights and Liberties
POLS-435	American Political Thought
POLS-460	Classical Constitutionalism, Virtue & Law
POLS-465	Modern Constitutional, Liberty & Equality
POLS-481	Women in Politics
POLS-485	Politics Through Fiction
POLS-490	Politics Through Film
International Relations	
POLS-205	Ethics in International Politics
POLS-210	Comparative Politics
POLS-215	Tech, Ethics & Global Politics
POLS-220	Global Political Economy
POLS-285	Environmental Ethics and Political Ecology
POLS-320	American Foreign Policy
POLS-325	International Law and Organizations
POLS-330	Human Rights in Global Perspective
POLS-335	Politics in Developing Countries
POLS-350	Politics of East Asia
POLS-351	Politics of China
POLS-360	International Political Thought
POLS-370	Cyberwar, Robots, & the Future of Conflict
POLS-375	Grand Strategy
POLS-390	Greece and the Political Imagination
POLS-390H	Greece and the Political Imagination
POLS-410	Evolutionary International Relations
POLS-440	War and the State
POLS-445	Terrorism and Political Violence
POLS-455	Comparative Public Policy
POLS-541	Peacekeeping and Conflict Transformation
POLS-542	War, Diplomacy, and State-Building

* At least one course must come from American Politics and one course must come from International Relations.
† At least one course must be taken at the 300-level or above.

Principles of Computing

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Program overview

The principles of computing immersion introduces students from interdisciplinary backgrounds (for majors outside of computing, mathematics, or informatics) to the central ideas of computing. In this immersion, you will understand how computing impacts and changes your world; establish the foundational concepts and best practices of computational thinking, use of computing technology, and data to solve real-world problems; and learn basic programming skills and develop programming techniques to solve problems, and become familiar with the effects that computing has on society and culture. This immersion is intended for students with no prior computing background as a bridge to expand their understandings of the computing domain.

Notes about this immersion:

- The immersion is closed to students majoring in applied mathematics, applied statistics and actuarial science, bioinformatics and computational biology, computational mathematics, computer science, computing and information technologies, cybersecurity, computer engineering, game design and development, human-centered computing, new media interactive development, software engineering, or web and mobile computing.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Required Courses	
ISCH-110	Principles of Computing
ISCH-370	Principles Of Data Science
Electives	
Choose one of the following:	
ISCH-201	Computing, Culture, and Society
IGME-386	Spatial Algorithms and Problem Solving
PUBL-363	Cyber Security Policy and Law

Psychology

Program overview

This immersion reflects the central themes of psychology, including topics such as the study of cognitive, developmental, social, and abnormal psychology. The study of behavior includes many different topics, but the unifying theme is that these courses all include the study of behavior using or applying the scientific method.

Notes about this immersion:

- This immersion is closed to students majoring in psychology.

Curriculum

COURSE	
Prerequisite	
PSYC-101	Introduction to Psychology
Electives	
Choose three of the following:	
PSYC-221	Psychological Disorders
PSYC-221H	Honors Psychological Disorders
PSYC-222	Biopsychology
PSYC-223	Cognitive Psychology
PSYC-224	Perception
PSYC-224H	Honors Perception
PSYC-225	Social Psychology
PSYC-226	Developmental Psychology
PSYC-231	Death and Dying
PSYC-233	History & Systems in Psychology
PSYC-234	Industrial and Organizational Psychology
PSYC-235	Learning and Behavior
PSYC-236	Personality
PSYC-237	Psychology of Women
PSYC-238	Psychology of Religion
PSYC-239	Positive Psychology
PSYC-240	Human Sexuality
PSYC-241	Health Psychology
PSYC-242	Cultural Psychology
PSYC-255	Behavioral Science Research Methods
PSYC-300	Topics in Psychology

Public Policy

Program overview

This immersion provides students with a clear understanding of public policy, the policy process, and policy analysis. Students have the opportunity to develop perspectives on a variety of contemporary public policy issues, especially those that emerge from scientific and technological advancements. Policy Analysis (PUBL-301) and Decision Analysis (PUBL-302) are offered especially for students who are considering the MS in public policy or who have an interest in analytical tools.

Notes about this immersion:

- This immersion is closed to students majoring in public policy.
- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
Choose three of the following:	
PUBL-201	Ethics, Values & Public Policy
PUBL-210	Introduction to Qualitative Policy Analysis
PUBL-301	Public Policy Analysis
PUBL-302	Decision Analysis
PUBL-360	Social Policy and Inequity
PUBL-363	Cyber Security Policy and Law
PUBL-510	Technology Innovation and Public Policy
PUBL-515	Business and Public Policy
PUBL-520	Information & Communications Policy
PUBL-530	Energy Policy
PUBL-531	Climate Change: Science, Technology and Policy
PUBL-589	Topics in Public Policy
STSO-201	Science and Technology Policy
STSO-421	Environmental Policy

* At lease one course must be taken at the 300-level or above.

Queer and Transgender Studies

Program overview

The queer and transgender studies immersion is an interdisciplinary set of courses whose primary concern is the critical study of cultures, creative expressions, histories, economic structures, and socio-political and legal institutions as they impact the formation of queer and transgender identities and the lives and experiences of people in the LGBTQ+ community.

The immersion is comprised of courses that feature LGBTQ+ content either as the sole focus or as prominent topics within a wider context. Through these courses, the queer and transgender studies immersion offers vibrant resources for critically investigating matters of embodiment, practices and ideologies of identity formation, the complexities of sexual and gender diversities, dynamics of power relations, and specific aspects of queer and transgender politics, histories, and cultures. Courses also offer powerful conceptual tools for crafting inclusive forms of subjectivities, social relations, and communities.

This provides a valuable complement to many programs in the humanities, media and communication studies, the visual and performing arts, the social sciences, and the health-related fields.

Curriculum

COURSE	
Required	
WGST-210	Introduction to LGBTQ+ Studies
Electives	
Choose two of the following:	
WGST-206	Queer Looks
WGST-240	Human Sexuality
WGST-318	Philosophies of Love, Sex, and Gender
WGST-330	Performing Identity in Popular Media
WGST-351	Gender and Sexuality in Hispanic Studies
WGST-361	Queering Gender
WGST-392	Queer and Transgender Creative Writing Workshop
WGST-399	Collaborative Learning Seminar in WGSS
WGST-459	Topics in LGBTQ+ Studies

* At least one of the elective courses must be at the 300 level or higher.

Religious Studies

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Program overview

Religion plays a major role in human affairs. To understand more fully the nature of the relationship between society and the individual, it is essential to have some understanding of religion. The religious studies immersion engages students in the study of religion from the perspective of major Western and non-Western traditions through courses in disciplines such as anthropology, history, literature, philosophy, and psychology.

Notes about this immersion:

- Students must select three courses from at least two distinct disciplines (e.g., anthropology, English, history, philosophy, or psychology)
- Philosophy majors must take two courses in disciplines other than philosophy.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-245	Ritual and Performance
ANTH-275	Global Islam
ENGL-307	Mythology & Literature
FNRT-209	Medieval and Renaissance Music
HIST-369	Histories of Christianity
HIST-370	Global History of Religions
PHIL-301	Philosophy of Religion
PHIL-311	East Asian Philosophy
PHIL-409	Existentialism
PHIL-410	Medieval Philosophy
PHIL-412	Nineteenth Century Philosophy
PSYC-238	Psychology of Religion

* Students must complete courses from at least two distinct disciplines (e.g. anthropology, English, history, philosophy, or psychology).
† Philosophy majors must take two courses in disciplines other than Philosophy.

Renaissance Studies

Program overview

The Renaissance studies immersion is an interdisciplinary set of courses focused on the study of cultural events (artistic, literary, philosophical, religious, scientific, among others) occurring during the Renaissance period (c. 1300-1600). The Renaissance saw the formation of new concepts and the occurrence of groundbreaking events such as the beginning of modern science and technology, the religious Reformation, the birth of the nation-state, the establishment of the banking system, the expansion of geographical horizons, the encounter with new cultures and populations, and the development of the notions of human dignity and human rights. Studying the Renaissance is also crucial to understanding contemporary debates centered on post-humanism, trans-humanism, technological humanism, and the various critiques of humanism, all of which have their conceptual basis in the Renaissance notion of homo universalis, or universal human being.

Notes about this immersion:

- Students must select courses from three different disciplines in order to ensure interdisciplinarity.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ARTH-311	Art and Architecture of Italy: 1250-1400
ARTH-317	Art and Architecture in Florence and Rome: 15th Century
ARTH-318	Art and Architecture in Florence and Rome: 16th Century
ARTH-379	Renaissance Painting in Flanders
ENGL-308	Shakespeare Drama
PHIL-317	Renaissance Philosophy
PRFL-250	Music History: Antiquity to Bach
PRFL-323	Traditions of Shakespearean Theatre

* Students must select their courses from three different disciplines.

Science of Film, Photography, and Imaging

James Ferwerda, Immersion Advisor
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Program overview

The science of film, photography, and imaging immersion explores the basic science behind technologies used in film, photography, and other imaging applications. Introductions to human visual perception, color science, imaging physics, and imaging system engineering set a groundwork for common theories underlying all major imaging industries. This immersion also provides necessary prerequisites for completion of a minor in imaging science.

Notes about this immersion:

- The immersion is closed to students majoring in imaging science, motion picture science, and photographic sciences.

Curriculum

COURSE	
Required Course	
SOFA-103	Introduction to Imaging and Video Systems
Electives	
Choose two of the following:	
IMGS-221	Vision & Psychophysics
IMGS-261	Linear and Fourier Methods for Imaging
IMGS-321	Geometric Optics
IMGS-341	Interactions Between Light and Matter
IMGS-351	Fundamentals of Color Science

Science, Technology, and Society

Program overview

The science, technology, and society immersion examines some of the major impacts of science and technology in the contemporary world. Special preference is given to American concerns. Students gain an overall appreciation of the social nature of science and technology as they have developed in the past, as they exist today, and as they may affect society in the future under various scenarios. Science and technology have become social systems in their own right and have made possible increasing freedom, a fantastic variety of choice, and, paradoxically, the growing interdependence of all segments of world society. A new level of public awareness and concern is crucial to understanding and dealing successfully with these consequences.

Notes about this immersion:

- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Electives	
Choose three of the following:	
STSO-140	Science, Technology, and Values
STSO-201	Science and Technology Policy
STSO-230	Foundations of Engagement and Community Transformation
STSO-240	Social Consequences of Technology
STSO-246	History of Women in Science and Engineering
STSO-321	Face of the Land
STSO-335	Industry, Environment, and Community in Rochester
STSO-340	Technological Disasters
STSO-341	Biomedical Issues: Science and Technology
STSO-342	Gender, Science, and Technology
STSO-345	Makers of Modern Science
STSO-346	Technology in American History
STSO-425	Nature and Quantification
STSO-441	Cyborg Theory: (Re)thinking the Human Experience in the 21st Century
STSO-442	Science, Technology and Society Classics
STSO-445	The Natural Sciences in Western History
STSO-489	Topics in Science, Technology, & Society
STSO-510	Interdisciplinary Capstone Seminar

* At least one course must be taken at the 300-level or above.

Social Inequalities

Program overview

Social inequalities and collective responses to them, both locally and globally, are the focus of this immersion. Students explore the interplay between social and cultural dimensions of the rapid globalization of societies, and the concurrent inequalities of race, ethnicity, class, gender, and culture. The egalitarian strivings that emerge from these inequalities also will be examined. Courses offer the unique standpoints of two academic disciplines, sociology and anthropology, to analyze the roles of powerful social institutions and culture industries, and to identify and explain social inequalities and resulting conflicts and egalitarian hopes.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-210	Culture and Globalization
ANTH-235	Immigration to the U.S.
ANTH-244	Human Centered Design Queries: An Anthropological Approach
ANTH-246	Gender and Health
ANTH-260	Native North Americans
ANTH-295	Global Public Health
ANTH-328	Heritage and Tourism
ANTH-335	Culture and Politics in Latin America
ANTH-341	Global Addictions
ANTH-345	Genocide and Transitional Justice
ANTH-361	Sociology of Numbers
ANTH-375	Native American Cultural Resources and Rights
ANTH-410	Global Cities
ANTH-425	Global Sexualities
ANTH-430	Visual Anthropology
SOCI-210	Black America-Culture & HipHop
SOCI-215	The Changing Family
SOCI-220	Minority Group Relations
SOCI-225	Social Inequality
SOCI-230	Sociology of Work
SOCI-235	Women, Work, and Culture
SOCI-246	Gender and Health
SOCI-295	Global Public Health
SOCI-300	Sociology of American Life
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-322	Health and Society
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-361	Sociology of Numbers
SOCI-395	Borders:Humans, Boundaries, and Empires

Sociology

Program overview

The immersion in sociology provides insights into the interactions between individuals and the major social forces shaping their lives. Students will learn sociology's perspectives and methods and use them to explain how society is possible, to examine various social problems, and to assess collective efforts for social change.

Notes about this immersion:

- This immersion is closed to students majoring in sociology and anthropology who have chosen the sociology track.

Curriculum

COURSE	
Electives:	
Choose three of the following:	
ANTH-246	Gender and Health (WI-GE)
ANTH-295	Global Public Health (WI-GE)
ANTH-301	Social and Cultural Theory
ANTH-302	Qualitative Research
ANTH-303	Statistics in the Social Sciences
ANTH-361	Sociology of Numbers
SOCI-210	Black America-Culture & HipHop
SOCI-215	The Changing Family
SOCI-220	Minority Group Relations
SOCI-225	Social Inequality
SOCI-230	Sociology of Work
SOCI-235	Women, Work, and Culture
SOCI-240	Deaf Culture in America
SOCI-246	Gender and Health
SOCI-295	Global Public Health
SOCI-300	Sociology of American Life
SOCI-301	Social and Cultural Theory
SOCI-302	Qualitative Research
SOCI-303	Statistics in the Social Sciences
SOCI-305	Crime and Human Rights: Sociology of Atrocities
SOCI-322	Health and Society (WI-GE)
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-355	CyberActivism: Diversity, Sex, and the Internet
SOCI-361	Sociology of Numbers
SOCI-395	Borders:Humans, Boundaries, and Empires
SOCI-489	Topics in Sociology

Theatre Arts

Program overview

The theatre arts immersion offers courses in dramatic literature, theatre history, theory, and practice. Students expand their knowledge of dramatic and theatrical arts as well as study the role and function of theatre in the broader contexts of history, culture, and the communication of ideas.

Notes about this immersion:

- At least one course must be taken at the 300 level or higher.

Curriculum

COURSE	
Electives	
Choose three of the following:	
PRFL-220	Theatre Ensemble*
PRFL-221	Fundamentals of Acting
PRFL-227	Dramatic Theory and Text Analysis
PRFL-230	Devising Theatre: Creating Ensemble Based Performance
PRFL-321	Traditions of Theatre in Europe
PRFL-322	Traditions of Theatre in the U.S.
PRFL-323	Traditions of Shakespearean Theatre
PRFL-324	African American Playwrights
PRFL-327	American Musical Theater
PRFL-330	Performing Identity in Popular Media (WI)
PRFL-331	Fundamentals of Directing
PRFN-200	Appreciation of Theatrical Design
PRFN-204	Scenic Painting and Props
PRFN-240	Dance: History†
PRFN-243	Dance: Jazz†
PRFN-244	Dance: Hip Hop†
PRFN-246	Dance: Modern†
PRFN-247	Dance: Ballet†

* Theatre Ensemble counts for one credit hour. The ensemble course may be taken up to three times for a total of three credit hours toward the theatre arts immersion.
† Only one dance class may be counted toward completion of the theatre arts immersion.
‡ At least one course must be completed at the 300-level or above.

Theatre Design and Stagecraft

Jill Bradbury, Immersion Advisor
jmbnpa1@rit.edu

Program overview

The theatre design and stagecraft immersion fosters an understanding and appreciation of the craft, theory, and art of design for theatre and dance. You will explore artistic, historical, and cultural aspects of design for diverse audiences.

Notes about this immersion:

- Students are required to complete at least one course at the 300-level or above as part of the immersion.

Curriculum

COURSE	
Required Course	
PRFN-200	Appreciation of Theatrical Design
Electives	
Choose one of the following:	
PRFN-101	Introduction to Accessibility and Inclusion in the Performing Arts
PRFN-201	Appreciation of Media in Performance
PRFN-204	Scenic Painting and Props
PRFN-207	Appreciation of Theatrical Costumes
PRFN-208	Appreciation of Theatrical Scenery
PRFN-209	Appreciation of Theatrical Lighting
Choose one of the following:	
PRFN-303	Semiotics of the Visual in Performing Arts
PRFN-316	Playwriting I
PRFN-403	Performance Studies
PRFL-321	Traditions of Theatre in Europe
PRFL-322	Traditions of Theatre in the U.S
PRFL-323	Traditions of Shakespearean Theatre
PRFL-324	African American Playwrights
PRFL-327	American Musical Theater

Urban Studies

Program overview

Metropolitan areas must address such enduring issues as poverty, homelessness, affordable housing, transportation, pollution, education, water and food security, health, crime, safety, recreation, zoning, segregation, ethno-racial tensions, and economic development. Each city must do so with recognition of its place in the wider regional, national, and global contexts. The urban studies immersion helps students identify and analyze such fundamental issues and allows them to explore and assess various ways policy-makers respond to those issues.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-235	Immigration to the U.S.
ANTH-312	People Before Cities
ANTH-410	Global Cities
ANTH-489	Topics in Anthropology*
ECON-440	Urban Economics
SOCI-220	Minority Group Relations
SOCI-235	Women, Work, and Culture
SOCI-300	Sociology of American Life
SOCI-330	Urban (In)Justice
SOCI-345	Urban Poverty
SOCI-489	Topics in Sociology*
STSO-550	Sustainable Communities

* This class can be taken if the topic is relevant to Urban Studies.

Visual Culture

Program overview

Visual culture explores the role of visual media in everyday life and its critical function in the dissemination of ideas in the public sphere. Emphasizing comparative critical approaches to the convergence of art, popular media, science, and technology, the immersion engages globalized visual media ranging from photography, television, film, new media (the web, digital imaging, and social networks), architecture, design, and art (painting, sculpture, and multimedia forms) in the context of such social arenas as art, news, science, advertising, and popular culture. The goal is to help students develop media literacy.

Notes about this immersion:

- At least one course must be taken at the 300 level or higher.

Curriculum

COURSE	
Electives	
Choose three of the following:	
COMM-240	Media, Creativity, and Innovation
FNRT-370	American Painting*
FNRT-372	American Film of the Studio Era
MUSE-220	Introduction to Museums & Collecting
MUSE-225	Museums & the Digital Age
MUSE-360	Visitor Engagement & Museum Technologies
VISL-206	Queer Looks
VISL-224	History & Theory of Exhibitions
VISL-295	Global Craftivism, Gender and Handwork
VISL-310	Media Production Lab
VISL-320	Contemporary Cinema: Fact and Fiction
VISL-373	American Film Since the Sixties
VISL-376	Visual Culture Theory
VISL-377	Imag(in)ing Rochester
VISL-383	Traumatic Images
VISL-384	Art of Dying
VISL-388	Gender and Contemporary Art
VISL-390	Visual Activism
VISL-440	Deaf Art & Cinema
WGST-206	Queer Looks
WGST-383	Traumatic Images
WGST-384	Art of Dying

* This course is offered on RIT's international campuses.

Women's and Gender Studies

Program overview

The women's and gender studies immersion allows students to explore the significance of gender as it intersects with racial, ethnic, religious, national, class, sexuality, and dis/ability-based identities, past and present. The immersion introduces critical analysis and knowledge-building methods drawn from fields such as women's and gender studies, feminist theories, critical race studies, queer studies, social justice work, and activism. Courses build knowledge about the personal, social, cultural, economic, and historical dynamics that inform gender and intersecting social categories. The immersion provides valuable skills and experiences applying these different lenses to real-world interactions with diverse individuals and communities, to current social challenges that impact multiple parties, and with an eye to improving equity and fair outcomes for everyone concerned.

Curriculum

COURSE	
Electives	
Choose three of the following:	
ANTH-325	Bodies and Culture
ANTH-425	Global Sexualities
WGST-200	Foundations of Women and Gender Studies
WGST-205	Feminist Practices of Inquiry
WGST-206/VISL-206	Queer Looks
WGST-210	Introduction to LGBTQ+ Studies
WGST-230	Men, Males, and Masculinities
WGST-235/SOCI-235	Women, Work, and Culture
WGST-237/PSYC-237	Psychology of Women
WGST-240/PSYC-240	Human Sexuality
WGST-245/CRIM-245	Prostitution and Vice
WGST-246/STSO-246	History of Women in Science and Engineering
WGST-250/CRIM-250	Domestic Violence
WGST-255/CRIM-255	Seminar on Sexual Violence
WGST-265/CRIM-265	Women and Crime
WGST-282/HIST-282	Women, Gender, and Computing
WGST-290/HIST-190	American Women's and Gender History
WGST-291/HIST-191	The History of Families and Children in the U.S.
WGST-300	Feminist Leadership, Gender Equity and Empowerment
WGST-305	Feminist Activism for Gender Justice
WGST-309/PHIL-309	Feminist Theory
WGST-318/PHIL-318	Philosophies of Love, Sex, and Gender
WGST-330/PRFL-330	Performing Identity in Popular Media
WGST-335/HIST-335	Women and the Deaf Community
WGST-342/STSO-342	Gender, Science, and Technology
WGST-351/MLSP-351	Gender and Sexuality in Hispanic Studies
WGST-352/MLCH-352	Globalization and Gender through Chinese Cinema: From Kungfu to World Factory
WGST-357/COMM-357	Communication, Gender, and Media
WGST-361	Queering Gender
WGST-383/VISL-383	Traumatic Images
WGST-384/VISL-384	Art of Dying
WGST-388	Gender and Contemporary Art
WGST-392/ENGL-392	Queer and Transgender Creative Writing Workshop
WGST-399	Collaborative Learning Seminar in WGSS
WGST-414/ENGL-414	Women and Gender in Literature and Media
WGST-449	Topics in Women's and Gender Studies
WGST-451/ECON-451/ SOCI-451	Economics of Women and the Family
WGST-459	Topics in LGBTQ+ Studies
WGST-481/POLS-481	Women in Politics

Undergraduate Admission

rit.edu/admissions

First Year Admission

Students applying for first-year admission for the fall semester may apply through an **Early Decision Plan** or **Regular Decision Plan**. The Early Decision Plan is binding and designed for those who consider RIT their first-choice university and wish to receive an early notification regarding admission. Early Decision 1 (ED1) has a November 1 application deadline. Admission notifications are provided for ED1 by mid-December and accepted students are expected to commit by January 15. Early Decision 2 (ED2) has a January 1 application deadline. Admission notifications are provided for ED2 by mid-January and accepted students are expected to commit by February 15.

First-year students who choose not to apply for Early Decision 1 or 2 are considered under our Regular Decision Plan. Regular Decision applicants are those who have provided all required application materials by January 15. Regular Decision applicants will begin receiving their admission decision in mid-March. Applications received after January 15 will be reviewed on a space available basis.

All applications for spring or summer semester entry are reviewed as they are received, and notification letters are mailed four to six weeks after all application credentials are received. Some programs are limited to fall entry only. Students interested in beginning their studies in the spring or summer semesters are encouraged to submit all required application materials by November 1.

Transfer admission

Applications for transfer admission are reviewed as they are received, and notification letters are posted to your admissions portal in four to six weeks after the application is completed. Because some programs fill to capacity, it is strongly recommended that transfer applicants complete their application by March 1 (December 1 for physician assistant applicants) for fall or summer admission and by November 1 for spring admission.

A transfer credit evaluation is completed as part of the application process. Transfer credit is granted by the academic departments for course work that is related to students' intended majors, if it is completed at a regionally accredited college or university. Usually a grade of C or better is required for transfer credit to be awarded.

There is no limit on the number of credit hours that can be awarded. However, a recipient of a two-year degree from an accredited university cannot receive more than 60 semester credits for that degree. A matriculated undergraduate student's year level is determined by the number of credit hours the student has earned, according to this scale:

YEAR LEVEL	1- 4-YEAR PROGRAMS	5-YEAR PROGRAMS
1	0-26	0-26
2	27-55	27-55
3	56-84	56-75
4	85-above	76-95
5		96-above

Specific instructions for completing the application process are available online at rit.edu/admissions. Be sure to read the instructions carefully before applying.

Factors considered in the admissions decision include, but are not limited to, past high school/college performance (particularly in required academic subjects), admission test scores (unless you are applying under our test-optional admission plan), competitiveness of high school or previous college, art portfolio (if required for major), and related experiences (work, military, etc.). Recommendations from those familiar with your academic performance and interviews with admissions counselors often are influential.

If you are accepted for admission, a $500 nonrefundable enrollment deposit reserves a place in your class and is credited to your first-semester costs at RIT. The due date for this deposit is indicated with each offer of admission.

International applicants

International students whose native language is not English must submit results of the TOEFL or the IELTS examinations along with the requirements listed below.

Application requirements

In order to complete the application process, you need to submit the following:

1. A fully completed application for admission (includes any required supplemental forms);
2. A nonrefundable $65 application fee;
3. An official high school transcript for all first-year applicants and transfer students with fewer than 30 semester hours completed at the time of application;
4. Official SAT or ACT results for all first-year applicants (unless you are applying under our test-optional admission plan);
5. Official transcripts of all completed college course work and a list of any courses in progress (and not on the transcript) or courses to be completed before enrolling at RIT; and
6. A portfolio of original artwork as part of the application process for students applying for admission to academic majors offered by the schools of Art, Design and Film and Animation (BFA programs). Please review the portfolio guidelines available at *www.rit.edu/artdesign/portfolio-requirements* before submitting your portfolio.

Placement testing for admitted students: Many majors at RIT depend on a solid foundation in mathematics. In an effort to enable students to succeed in their college mathematics courses, the School of Mathematical Sciences developed a Mathematics Placement Exam. It assesses students' mastery of some of the fundamental mathematical concepts they have seen in their high school mathematics courses.

New York State immunization requirement: New York State Public Law 2165 requires that all matriculated students enrolled for more than 6 credit hours in a term and born after January 1, 1957, must provide RIT's Student Health Center with proof that they have received the appropriate immunizations against measles, rubella, and

mumps. Immunization requirements include two measles vaccinations, at least one month apart, with a live virus (after January 1, 1968, and after the first birthday) and one vaccination each against mumps and rubella (after January 1, 1969, and after the first birthday). Additional information concerning the necessary documentation and where it must be sent is included with the Admissions Office acceptance packet or available from the Student Health Center office.

Admissions services and campus visits: Selecting the appropriate college is a difficult decision, and visiting a campus often helps students form more accurate impressions. We encourage campus visits and personal admission interviews because they allow students to see our outstanding facilities firsthand and get answers to questions they may have while examining personal, academic, and career goals.

Experienced admissions counselors are available to provide information and assist students with exploring academic options. Students may choose to participate in Admissions Open House programs or arrange personal interviews and campus tours. These options are not required for admission. An appointment for an admissions visit and campus tour may be scheduled by contacting the Undergraduate Admissions Office via our website, rit.edu/admissions, or calling (585) 475-6631. Office hours are Monday through Friday, 8:30 a.m. to 4:30 p.m. EST.

Deaf and hard-of-hearing students who wish to enter NTID or another RIT college may contact the RIT/NTID Office of Admissions by sending an e-mail to ntidadmissions@ntid.rit.edu or calling (585) 475-6700 (voice), toll free in the U.S. and Canada (866) 644-6843 (voice), or by videophone (585) 743-1366. Office hours are Monday through Friday, 8:30 a.m. to 4:30 p.m. EST.

Applying to NTID

In addition to the six application requirements listed above for admission to RIT, deaf and hard-of-hearing students applying for admission to programs offered at the National Technical Institute for the Deaf (NTID) or to any other college of RIT must submit an audiological record completed by a certified audiologist (CCC-A). All audiograms must be unaided and have been completed within three years of the application date. The audiogram is required in order to qualify for educational access and support services as well as NTID's federally supported tuition rate. Eligibility for NTID access and support services, which is agreed upon by RIT and the United States Department of Education, includes this criteria:

Hearing loss: An audiogram is required. Students must demonstrate a significant hearing loss and demonstrate the ability to benefit from the models used at RIT/NTID designated specifically to provide access to academic programs for deaf and hard-of-hearing students.

The NTID Office of Admissions adheres to the same application deadlines and notification dates for early and regular decision as outlined in the first-year admission text in this section.

Deaf and hard-of-hearing students may enter into an NTID program, or they may qualify for entry directly into a program in another RIT college with NTID sponsorship.

FIRST YEAR ADMISSION PREPARATION & REQUIREMENTS

Most students applying to RIT choose a specific major as part of the admission process. In addition, most colleges offer undeclared options. Given the variety of majors, admission requirements vary from one major to another. The chart below is provided to help you select a major or option that best fits your interests and academic background.

For all bachelor's degree programs, a strong performance in a college preparatory program is expected. Generally, this includes 4 years of English, 3-4 years of mathematics, 2-3 years of science and 3 years of social studies and/or history. Completion of a High School Diploma or its equivalent is required. **See specific math and science requirements and other recommendations below.**

College	Majors and Options		Specific Math and Science Requirements and Other Recommendations
College of Art and Design	**School of Art** • Illustration • Medical Illustration • Studio Arts – Ceramics Option – Expanded Forms Option – Furniture Design Option – Glass Option – Metals and Jewelry Design Option – Printmaking Option – Painting Option – Sculpture Option • Art Exploration[1]	**School of Design** • 3D Digital Design – 3D Visualization Option – Game Arts Option • Graphic Design • Industrial Design • Interior Design • New Media Design • Design Exploration[1]	• Studio art experience and a portfolio of original artwork are required for all programs in the schools of Art and Design. • Portfolio guidelines can be found at: www.rit.edu/artdesign/portfolio-requirements. • Medical Illustration requires biology.
	School of Film and Animation • Film and Animation – Animation Option – Production Option • Motion Picture Science		• Film and Animation applicants are required to submit a portfolio of original work. Portfolio guidelines can be found at: www.rit.edu/artdesign/portfolio-requirements. • Motion Picture Science requires 3 years of math; pre-calculus **and** physics are recommended.
	School of Photographic Arts and Sciences • Photographic and Imaging Arts – Advertising Photography Option – Fine Art Photography Option – Photojournalism Option – Visual Media Option	• Photographic Sciences • Photographic Arts and Sciences Exploration[1]	• Biology is required for the biomedical photographic communications option of photographic sciences.
Saunders College of Business	• Accounting • Finance • Hospitality and Tourism Management • Global Business Management	• Management Information Systems • Marketing • Supply Chain Management • Business Exploration[1]	• 3 years of math required; pre-calculus recommended
Golisano College of Computing and Information Sciences	• Computer Science • Computing and Information Technologies • Cybersecurity • Game Design and Development • Human-Centered Computing	• New Media Interactive Development • Software Engineering • Web and Mobile Computing • Computing Exploration[1]	• 4 years of math including pre-calculus required in all programs except Computing and Information Technologies, Human-Centered Computing, and Web and Mobile Computing, where 3 years of math are required and pre-calculus is recommended • All programs require chemistry or physics and strongly recommend both • Computing electives are recommended
Kate Gleason College of Engineering	• Biomedical Engineering • Chemical Engineering • Computer Engineering • Electrical Engineering (all options) • Industrial Engineering (all options)	• Mechanical Engineering (all options) • Microelectronic Engineering • Engineering Exploration Program[1]	• 4 years of math required; including pre-calculus or above • Chemistry **and** physics required • Biology required for Biomedical Engineering

Pre-Professional Studies

Students interested in pre-professional studies (pre-law, pre-med and other pre-health professions) may enroll in any major at RIT and then take advantage of the advising and student organizations associated with their respective interests.

[1] A one-year program for students wishing to explore alternatives before selecting a specific major within this RIT college or school.

College	Majors and Options	Specific Math and Science Requirements and Other Recommendations
College of Engineering Technology	• Civil Engineering Technology (all options) • Computer Engineering Technology (all options) • Electrical Engineering Technology (all options) • Environmental Sustainability, Health and Safety (all options) • Mechanical Engineering Technology (all options) • Mechatronics Engineering Technology • Robotics and Manufacturing Engineering Technology • Engineering Technology Exploration[1]	• 3 years of math required; pre-calculus recommended • Chemistry **or** physics required; biology recommended • Technology electives desirable
	Department of Packaging and Graphic Media Science • Packaging Science • Print and Graphic Media Technology	• 3 years of math required • Chemistry **or** physics required
College of Health Sciences and Technology	• Biomedical Sciences • Diagnostic Medical Sonography (Ultrasound) • Exercise Science • Nutritional Sciences • Physician Assistant (BS/MS)	• 3 years of math is required. Pre-calculus is recommended for all programs except Dietetics and Nutrition and Nutritional Sciences. • Biology is required for all programs. Chemistry is required for all programs except diagnostic medical sonography, where is it recommended.
College of Liberal Arts	• Advertising and Public Relations • Applied Modern Language and Culture (all options) • Communication • Criminal Justice • English • Economics • History • Humanities, Computing, and Design • International and Global Studies • Journalism • Museum Studies • Philosophy • Political Science • Psychology • Sociology and Anthropology • Women's, Gender, and Sexuality Studies • Liberal Arts Exploration[1]	• Strong performance in English and social studies is expected.
College of Science	• Applied Mathematics • Applied Statistics and Data Analytics • Biochemistry • Bioinformatics and Computational Biology • Biology • Biotechnology and Molecular Bioscience • Chemistry • Computational Mathematics • Environmental Science • Imaging Science • Neuroscience • Physics • Science Exploration[1]	• 3 years of math required; pre-calculus is required for Imaging Science and Physics and recommended for all • Biology required for Biological Sciences and Environmental Science and recommended for Science Exploration • Chemistry required for Biological Sciences, Bio-chemistry, Chemistry and Environmental Ecience • Chemistry **or** physics required for Physics
National Technical Institute for the Deaf (NTID)	Deaf and hard-of-hearing students seeking admission to bachelor's degree programs in the other colleges of RIT should refer to the information for the appropriate college and apply for NTID support and access services during the application process. A **Pre-baccalaureate Studies Option** also is available for students who may need additional preparation before entering a bachelor's degree program in engineering, liberal arts, science and mathematics, or visual communications.	
	• American Sign Language-English Interpretation (BS)	• Strong performance in English is expected • Must demonstrate competency to begin at ASL II
	• Community Development and Inclusive Leadership (BS)	• Strong performance in English and social sciences is expected • ASL fluency required for hearing students applying to the Deaf Leadership track
	Associate Degree Leading to Bachelor's Degree (A + B) Programs (Deaf and Hard-of-Hearing Students ONLY) • Accounting Technology • Administrative Support Technology • Applied Computer Technology • Applied Liberal Arts • Applied Mechanical Technology • Business • Business Administration • Career Exploration Studies[1] • Civil Technology • General Science • Laboratory Science Technology • Mobile Application Development • 3D Graphics Technology	• 3 years of math for engineering and science; 2 for other programs • 2 years of science for engineering and science; 1 for other programs • English language
	Career-focused Associate Degree Programs (Deaf & Hard-of-Hearing Students ONLY) • Accounting Technology • Administrative Support Technology • Applied Computer Technology • Architectural and Civil Drafting Technology • Business Administration • Business Technology • Career Exploration Studies[1] • Design and Imaging Technology • Laboratory Science Technology • Mobile Application Development • Precision Manufacturing Technology • 3D Graphics Technology	• College-bound high school curriculum • English language skills as evidenced by application materials • Career-related electives desirable
School of Individualized Study (SOIS)	• Applied Arts and Sciences	This degree offers students the opportunity to create individualized undergraduate programs of technical and professional study.

[1] A one-year program for students wishing to explore alternatives before selecting a specific major within this RIT college or school.

Transfer Admission Course Recommendations

COLLEGE OF ART AND DESIGN		
Majors and Options	**Transfer Course Recommendations without Associate Degree**	**Appropriate Associate Degree Programs for Transfer**
School of Art Illustration, Medical Illustration, Studio Arts **School of Design** 3D Digital Design (all options), Graphic Design, Industrial Design, Interior Design, New Media Design	Courses in studio art, art history, and liberal arts. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program.	Related programs or studio art experience in desired disciplines. A portfolio of original artwork is required to determine admissions, studio art credit, and year level in the program.
School of Film and Animation Film and Animation (all options)	Courses in liberal arts, science, design, drawing, and film, video, or animation	Transfer as a third-year student is uncommon, as comparable programs are not generally available at other colleges
Motion Picture Science	Courses in calculus or higher mathematics, college chemistry, calculus-based physics, and liberal arts	Transfer as a third-year student is uncommon, as comparable programs are not generally available at other colleges
School of Photographic Arts and Sciences Photographic and Imaging Arts (all options)	Courses in liberal arts, photography, design, and art history. Portfolio required for photo credit.	Applied Photography. Portfolio required for photo credit.
Photographic Sciences	Courses in biology, college physics, mathematics, photography, and liberal arts. Portfolio required for photo credit.	No common program available

SAUNDERS COLLEGE OF BUSINESS		
Majors and Options	**Transfer Course Recommendations without Associate Degree**	**Appropriate Associate Degree Programs for Transfer**
Accounting	Courses in economics, accounting, liberal arts, science, and mathematics	AS degree in Accounting or Business Administration
Finance Global Business Management Marketing Supply Chain Management	Courses in economics, liberal arts, science, and mathematics	AS degree in Business Administration or Liberal Arts
Management Information Systems	Courses in liberal arts, math, science, economics, and computer science	AS degree in Data Processing/Management Information Systems or in Business Administration
Hospitality and Tourism Management	Courses in business and economics, foreign language, math, science, and liberal arts.	Dietetics or Nutrition, Food Service Management, Hotel/Resort Management, Restaurant Management, Travel/Tourism Management, Agriculture and Technology, Business, or Liberal Arts

B. THOMAS GOLISANO COLLEGE OF COMPUTING AND INFORMATION SCIENCES		
Majors and Options	**Transfer Course Recommendations without Associate Degree**	**Appropriate Associate Degree Programs for Transfer**
Computer Science Department Computer Science	Courses in computer science, calculus, liberal arts, calculus-based physics, chemistry, or biology	AS degree in Computer Science, Engineering Science, or Liberal Arts
Computing Security Department Cybersecurity **School of Information** Computing and Information Technologies Human-Centered Computing Web and Mobile Computing **School of Interactive Games and Media** Game Design and Development New Media Interactive Development	Courses in programming, computer applications, calculus, lab sciences, liberal arts	AS degree in Computer Applications, Computer Science, Information Technology, or Liberal Arts
Software Engineering Department Software Engineering	Courses in computer science, calculus, liberal arts; calculus-based physics, chemistry, or biology	AS degree in Computer Science, Engineering Science, or Liberal Arts

KATE GLEASON COLLEGE OF ENGINEERING		
Majors and Options	**Transfer Course Recommendations without Associate Degree**	**Appropriate Associate Degree Programs for Transfer**

Biomedical Engineering Chemical Engineering Computer Engineering Electrical Engineering (all options) Industrial Engineering (all options) Mechanical Engineering (all options) Microelectronic Engineering	Pre-engineering courses such as calculus, calculus-based physics, chemistry, and liberal arts. Computer science courses for computer engineering applicants.	AS degree in Engineering Science (plus computer science electives for computer engineering applicants)

COLLEGE OF ENGINEERING TECHNOLOGY

Majors and Options	Transfer Course Recommendations without Associate Degree	Appropriate Associate Degree Programs for Transfer
School of Engineering Technology		
Civil Engineering Technology (all options)	Courses in mathematics, science, engineering science, and engineering technology	Civil, Construction, Environmental, Architectural, Transportation, or Surveying Technology; Engineering Science
Computer Engineering Technology (all options)	Courses in computer science, math, science, engineering science, and engineering technology	Computer Technology, Electrical or Electronic Technology, or Computer Science
Electrical Engineering Technology (all options)	Courses in mathematics, science, engineering science, and engineering technology	Electrical Technology, Electronic Technology, Engineering Science
Environmental Sustainability, Health and Safety (all options)	Math through Calculus I, micro and macro economics, introductory courses in biology, chemistry, and physics	Biology, Chemistry, or Environmental Sciences; Business or Public Administration; Liberal Arts with math/science
Mechanical Engineering Technology (all options)	Courses in mathematics, science, engineering science, and engineering technology	Mechanical, Design and Drafting, Air Conditioning, or Electromechanical Technology; Engineering Science
Mechatronics Engineering Technology	Courses in mathematics, science, engineering science, and engineering technology	Electrical or Mechanical Technology, Electronic Technology, Engineering Science
Robotics and Manufacturing Engineering Technology	Courses in mathematics, science, engineering science, and engineering technology	Manufacturing, Mechanical, Drafting and Design, Robotics, or Electromechanical Technology; Engineering Science
Department of Packaging and Graphic Media Science		
Packaging Science	Courses in business, mathematics, science, liberal arts, statistics, or computer science	Business Administration, Marketing, Management, Graphic Arts, Engineering Science, Liberal Arts with math/science
Print and Graphic Media Technology	Courses in liberal arts, college math, physics and chemistry, business	Transfer from associate degree programs considered on an individual basis

COLLEGE OF HEALTH SCIENCES AND TECHNOLOGY

Majors and Options	Transfer Course Recommendations without Associate Degree	Appropriate Associate Degree Programs for Transfer
Biomedical Sciences	Courses in liberal arts, sciences, and math	AS degree in Biology or Liberal Arts with biology option
Diagnostic Medical Sonography (Ultrasound)	Courses in liberal arts, sciences, and math	AS degree in Liberal Arts with science option; Allied Health; Radiologic Technology
Nutritional Sciences	Courses in liberal arts, sciences, and math. Science courses are required for Dietetics and Nutrition major.	Dietetics or Nutrition, Foodservice Management, or Liberal Arts
Exercise Science	Courses in liberal arts, sciences, and math	AS degree in Liberal Arts with science option; Allied Health areas
Physician Assistant *(Fall Entry Only)*	Courses in liberal arts, sciences, and math	AS degree in Liberal Arts with science option; Allied Health areas

COLLEGE OF LIBERAL ARTS

Majors and Options	Transfer Course Recommendations without Associate Degree	Appropriate Associate Degree Programs for Transfer
Advertising and Public Relations	Courses in advertising, marketing, communications, liberal arts, and science	Advertising, Business/Marketing, Communications, Public Relations, or Liberal Arts
Applied Modern Language and Culture (all options)	Courses in liberal arts, science, foreign language, and history	Liberal Arts with social sciences, science, or languages
Communication	Courses in liberal arts, math, science, and computer science	Liberal Arts with emphasis in communication and a technical field such as business, photography, or computer science

Criminal Justice	Courses in criminal justice or related areas, liberal arts, math, and science	Criminal Justice, Human Services, or Liberal Arts
Economics	Courses in business, liberal arts, math, science, and computer science	AS degree in Business Administration or Liberal Arts
English	Courses in english or related areas, liberal arts, math, and science	Liberal Arts
History	Courses in history or related areas, liberal arts, math, and science	Liberal Arts
Humanities, Computing, and Design	Courses in liberal arts, math, science, and computer science	Liberal Arts with emphasis in communication and a technical field such as business, photography, or computer science
International and Global Studies Political Science	Courses in liberal arts, science, foreign language, and history	Liberal Arts with social sciences, sciences, or languages
Journalism	Courses in liberal arts, math, science, and computer science	Liberal Arts with emphasis in communication and a technical field such as business, photography, or computer science
Museum Studies	Courses in liberal arts, art history, studio arts, photography, business, and chemistry	Fine Arts, Liberal Arts, or Business/Marketing
Philosophy	Courses in liberal arts, math, science, philosophy, and ethics	Liberal Arts
Psychology	Courses in liberal arts, sciences, social sciences	Liberal Arts with science or social science
Sociology and Anthropology	Courses in liberal arts, sciences, and math	Liberal Arts, Environmental Studies, Economics, Government, Science
Women's, Gender, and Sexuality Studies	Courses in liberal arts, sciences, social sciences	Liberal Arts

NATIONAL TECHNICAL INSTITUTE FOR THE DEAF

Majors and Options	Transfer Course Recommendations without Associate Degree	Appropriate Associate Degree Programs for Transfer
3D Graphics Technology, Accounting Technology, Administrative Support Technology, Applied Computer Technology, Applied Liberal Arts, Applied Mechanical Technology, Architectural and Civil Drafting Technology, ASL-English Interpretation, Business, Business Administration, Business Technology, Civil Technology, Community Development and Inclusive Leadership, Design and Imaging Technology, General Science, Laboratory Science Technology, Mobile Application Development, Precision Manufacturing Technology, Pre-baccalaureate Studies	Transfer requirements vary by program.	Transfer requirements vary by program. Please contact NTID Office of Admissions, 585-475-6700, toll free in the U.S. and Canada at 866-644-6843, or by videophone at 585-743-1366.

COLLEGE OF SCIENCE

Majors and Options	Transfer Course Recommendations without Associate Degree	Appropriate Associate Degree Programs for Transfer
Chester F. Carlson Center for Imaging Science		
Imaging Science	Courses in math, computer science, and liberal arts	AS degree in Liberal Arts with math/science option, Computer Science, Engineering Science, Science
Thomas H. Gosnell School of Life Sciences		
Biology	Courses in liberal arts, sciences, and math	AS degree in Biology or Liberal Arts with biology option
Bioinformatics and Computational Biology Biotechnology and Molecular Bioscience	Courses in liberal arts, sciences, math, and computing	AS degree in Biotechnology or Liberal Arts with biology
Environmental Science	Courses in liberal arts, sciences, and math	AS degree in Biology, Chemistry, Environmental Science, Liberal Arts with science option
School of Mathematical Sciences		
Applied Mathematics Applied Statistics and Data Analytics Computational Mathematics	Courses in liberal arts, physics, math, and chemistry	AS degree in Liberal Arts with math/science option
School of Chemistry and Materials Science		
Biochemistry Chemistry	Courses in liberal arts, chemistry, math, and physics	AS degree in Liberal Arts with chemistry option; Chemical Technology, Laboratory Technology
School of Physics and Astronomy		
Physics	Courses in calculus or higher mathematics, college chemistry, calculus-based physics, and liberal arts	No common program available.
Integrated Sciences Academy		
Neuroscience	Courses in liberal arts, science, and math	No common program available.

SCHOOL OF INDIVIDUALIZED STUDY

Majors and Options	Transfer Course Recommendations without Associate Degree	Appropriate Associate Degree Programs for Transfer
Individualized Program		The Applied Arts and Sciences program is appropriate for individuals who have prior college-level learning, are interested in changing majors, have unique ideas about how they want to design their major, or want to prepare themselves for a career that requires skills and expertise from several disciplines.

University Costs

The following information is provided to assist students and their families in understanding the full range of student financial aid and scholarship programs available to undergraduates, as well as the costs, payment procedures, and refund policies associated with student enrollment at RIT.

Costs and payment procedures

Charges for tuition, fees, and room and board are computed on a term basis. University billing statements may be paid by cash, check, or electronic check (e-check). The university does not accept credit card payments for tuition, fees, and room and board that appear on the student billing statement. However, we have an arrangement for a third-party vendor to accept MasterCard, VISA, and Discover Card when payment is made online. The vendor does charge a service fee for each credit card transaction.

Billing-related payments by check may be mailed to: Rochester Institute of Technology, Student Financial Services, 25 Lomb Memorial Drive, Rochester, NY 14623. Payment also may be made in person at the Student Financial Services Office on the first floor of the University Services Center. Credit card and e-check payment information can be found on the Student Financial Services website at rit.edu/eservices.

Due dates are clearly designated on the billing statement and our website. Failure to pay the amount due or arrange an optional payment plan by the due date will result in a late payment fee for students without a valid deferral. Please visit www.rit.edu/sfs/billing-and-payment-options for information reakted to billing, payment options, prepayment plans, and more.

Tuition assessment policies

1. Degree-seeking students are charged the undergraduate rate for all courses taken, including those courses taken while on co-op.
2. Students on co-op will not be charged tuition for those semesters unless they also are enrolled in classes.
3. Non-degree seeking students are charged for the type of course taken (undergraduate rate for undergraduate courses, graduate rate for graduate courses).
4. Students taking courses during summer semester should refer to the Summer Bulletin for policies and procedures.

2022–23 RIT Undergraduate Cost of Attendance (Estimated charges, two semesters)

Expenses	Per Year
BILLABLE COSTS	
Tuition (12-18 credit hours)	$56,136
Student Activities Fee	$370
Student Health Services Fee	$510
Rent*	$9,032
Board†	$6,484
Total Estimated Billed Expenses*	**$72,532**
Estimated expenses for books, personal expenses, transportation, and loan origination	$2,858
TOTAL ESTIMATED COST OF ATTENDANCE	**$75,390**

* First-Year Undergraduate Students, add $335 for Orientation fees.
Transfer Undergraduate Students, add $175 for Orientation fees.

Credit by experience/credit by exam is assessed at $557 per credit hour.
Per year amount is based on 2 semesters.

Students enrolled in more than 18 credit hours are charged $1.412 for each additional credit hour.
Students in the Honors Program are not assessed additional tuition for overloads (up to 24 credit hours).

For financial aid purposes, students living off-campus are provided the same rent and board allowance as on campus. Students living at home with a parent or a relative are provided with a modest allowance for expenses related to living at home and may contact the Office of Financial Aid and Scholarships for more information.

All students are expected to have health insurance coverage. Health insurance may be obtained through the university, or through family or individual policies. International Students (except those on H1b visas) will automatically be enrolled in and billed for the plan each semester. International students who have comparable ACA-compliant coverage may submit a waiver form.

In order to be best prepared for an RIT education, students are strongly encouraged to consider the purchase of a laptop. Most colleges have recommended minimum computer specifications. Students may also take advantage of an educational discount if purchased through RIT's Digital Den.

Other fees

In addition to the fees specified, certain groups of students may incur other fees, such as New Student Orientation fee. Contact Student Financial Services for information: rit.edu/fa/sfs/

Some courses require additional charges to cover laboratory, studio, or supply fees. Consult the registrar's schedule. Students are responsible for incuring the costs associated with textbooks and other supplies.

Student accident and sickness insurance: All registered students are required to maintain medical insurance while attending RIT. Insurance coverage can be through RIT, a family member's policy, or a personal policy.

A student accident and sickness insurance plan is available through RIT. There is a separate charge for this insurance.

The plan provides coverage, within limits specified in the policy, for sickness and injury, outpatient services, emergency care, and prescriptions.

Enrollment in this plan is voluntary for all students except registered international undergraduate students (full- and part-time) on A, B, E, F, G, I, J, K, O, Q, R, and V visas. These students will be enrolled automatically in the basic accident and sickness policy on a semiannual basis.

There is no need to waive coverage if it is not desired. Students who want to enroll in this plan may enroll online or by mail. An open enrollment period is available at the beginning of each academic semester. Premium can be paid by check, money order, credit card, or may be added to the student's account.

The open enrollment period ends 30 days after the start of the academic semester in which the student first registers at RIT.

For plan and enrollment information, visit the university health plans website (universityhealthplans.com) or call 800-437-6448. Students are not required to obtain the RIT student accident and sickness insurance plan to receive services at the RIT Student Health Center.

Vocational rehabilitation

Students receiving vocational rehabilitation (VR) support for fees and tuition must file authorization with RIT before registration. If authorization has not been received before registration, students must either obtain from their VR counselors a letter of commitment stating the dollar amount that is authorized and present it to Student Financial Services or be prepared to pay for the charges in question. If authorization is received after a student has paid the charges, he or she will receive a refund.

1. Students must pay all charges not authorized for payment by VR before the semester due date.
2. VR counselors should specify each charge they are covering on their authorization forms.
3. Clarification of VR authorization/billing procedures should be addressed to:

Rochester Institute of Technology
NTID/VR Billing
Student Financial Services
25 Lomb Memorial Drive
Rochester, NY 14623-5603

Financial standing

Students, former students, and graduates are in good financial standing when their account is paid in full through the Student Financial Services Office. A late payment fee will be charged to all student accounts that become past due. This includes, but is not limited to, deferred payment accounts that become past due. Those whose account is not paid in full will not receive transcripts, diplomas, or other forms of recognition or recommendation from the university. Students must be in good financial standing with RIT to register for classes.

The university reserves the right to change its prices and pricing policies without prior notice.

Electronic billing procedures

The university has an electronic billing (eBill) program for students. Each month, all RIT students receive an e-mail notification on their official university e-mail account stating that their eBill is available. Students have the option of granting additional access to allow for a parent, guardian, sponsor, or other authorized user to receive eBill notifications.

Refund policies

The acceptable reasons for withdrawal with full refund during the semester are:

1. Active military service: A student called to active military service during the first eight weeks of the term may receive a full tuition refund. If called after the eighth week, he or she may elect to complete the course by making special arrangements with both the instructor and department, or may withdraw and receive a full tuition refund. If he or she withdraws, the course must be repeated at a later date.
2. Academic reasons: Students sometimes register before grades for the previous semester are available. If they later find they are subject to academic suspension or have failed prerequisites, they will be given a full refund upon withdrawal.

A full-time student must officially withdraw from all courses or take a leave of absence in order to be eligible for a partial tuition refund. Students must complete a leave of absence or withdrawal form, which can be initiated with their academic department. A partial refund will be made during a semester if withdrawal/leave of absence is necessitated for one of the following reasons:

1. Illness, certified by the attending physician, causing excessive absence from classes
2. Withdrawal for academic or disciplinary reasons, at the request of RIT, during a semester
3. Transfer by employer, making class attendance impossible
4. Withdrawal for academic, disciplinary, or personal reasons at the request of the student, approved by the student's adviser or department representative and the Student Financial Services Office

Partial refund schedule for tuition

For more information, please visit rit.edu/sfs/refund for refund schedules and questions regarding refund policies.

Please note that nonattendance does not constitute an official withdrawal.

A student is not officially withdrawn until he or she receives a copy of the withdrawal form. The last date of academic related activity will be used to determine the refundable amount.

If the student drops his or her course load from full-time (12 or more credits) to part-time (less than 12 credits) status during the official drop/add period, he or she may contact the Student Financial Services Office for a refund based on the difference between the full-time tuition charge and the total per-credit charge for the part-time course load.

No refund will be made for classes dropped after the official drop/add period unless the student is officially withdrawing from the university.

Enrollment deposits are not refundable.

If institutional charges are reduced due to withdrawals, financial aid programs are reimbursed before a cash refund is issued to the student. The student is responsible for any unpaid balance at the time of withdrawal. Aid programs are reimbursed in the following sequence: Federal Direct Unsubsidized Loan, Federal Direct Subsidized Loan, Graduate PLUS Loan, Parent PLUS Loan, Federal Pell Grants, Federal SEOG, other federal grants, state aid, institutional aid. If a credit balance still remains, the student is then issued a refund.

For further information or comments regarding refund policies and specific withdrawal dates, contact the Student Financial Services Office.

Appeal process

An official appeal process exists for those who feel that individual circumstances warrant exceptions from published policy. The inquiry in this process should be made to the director of Student Financial Services.

Partial refund schedule for room and board

To complete a withdrawal from RIT, a resident student must check out with RIT Housing. All students on a meal plan should check out with the RIT Dining office. Refunds, when granted, are from the date of official checkout.

Refund schedule and percentages for room and board can be found at https://www.rit.edu/fa/sfs/refund.

Financial Aid and Scholarships

rit.edu/admissions/financial-aid

RIT offers a comprehensive financial aid program consisting of merit-based scholarships and a full range of need-based grants, loans and campus employment programs that provide assistance to RIT students and families. The information provided in this section is an overview of the sources of assistance available. Please consult the Office of Financial Aid and Scholarships' website for more detailed information.

Scholarships

Scholarships are merit-based, recognizing a student's academic and extracurricular achievements.

RIT offers a number of merit-based scholarships. All admitted students are reviewed by the Scholarship Selection Committee. No separate application is required. Students who meet the criteria for more than one RIT merit-based scholarship generally will be offered the scholarship of highest value.

The Office of Financial Aid and Scholarships encourages students to apply for scholarships offered by private organizations. This is an excellent source of funding that may reduce the need to borrow. In many cases, no adjustment to a student's financial aid offer is necessary. If we are required by federal regulations to adjust a financial aid offer as a result of the addition of an outside scholarship, we will make every effort to reduce the student's loan or work study offer before reducing RIT need-based grants.

Grants

Need based grants are offered by RIT, as well as federal and state governments. A student's aid offer may include Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (SEOG), New York State Tuition Assistance Program (TAP) and RIT grants.

It is important to note, the combination of RIT grants and scholarships may not exceed tuition.

Federal Direct Loans

The Federal Direct Loan program is the most widely used student loan program. Federal Direct loans may be subsidized or unsubsidized. The interest is paid by the government in the subsidized program while students are enrolled and up to 6 months after they graduate or drop below a half-time enrollment. The interest for the unsubsidized program is not covered and it is capitalized (added to the principal amount borrowed). No payment is required however from students while they are enrolled in school and up to 6 months after they graduate or drop below a half-time enrollment.

Alternative Educational Loans

Alternative educational loans are private loans offered through banks that can be used to supplement a student's financial aid offer. Students are the primary borrower with a credit-worthy cosigner. Terms and conditions vary by lender.

Student Employment and Co-op

There are a variety of on-campus employment opportunities for RIT students. Students are paid bi-weekly for hours worked and most students use their earnings to pay for books, travel, and personal expenses. Students are able to work up to 20 hours per week.

Students may have the opportunity to have a paid cooperative education experience related to their field of study. Students will not be charged tuition while on co-op and their earnings are not factored in when determining their federal or institutional financial aid eligibility in a future year.

Academic progress requirements for state aid programs

New York State Tuition Assistance Program (TAP)

In order to receive the TAP grant, an individual must be admitted as a full-time student in an approved program, meet New York State residency and income requirements, pursue the program of study in which they are enrolled, and make satisfactory progress toward completion of their program of study.

TAP academic requirements are current as of the 2023-24 year. Standards are subject to change by legislative action.

Completion of a course is defined as meeting course requirements and receiving a letter grade of A, B, C, D or F.

State regulations mandate that if a student repeats a course in which a passing grade acceptable to the university was previously received, the repeated course does not count toward the minimum 12-credit-hour course load required for TAP and other state programs.

In addition, an accelerated TAP payment cannot be received unless the recipient completes a minimum of 24 RIT credit hours in the previous two terms. An accelerated term is the third consecutive term of full time course enrollment at RIT.

Waiver of academic progress standards for TAP

Students who have been denied TAP benefits due to failure to maintain satisfactory standards of academic progress may request a one-time waiver of those standards. State regulations require that these waivers be granted only under extraordinary circumstances. Students failing to meet satisfactory progress standards will be given the opportunity to submit an appeal to the Office of Financial Aid and Scholarships which may include required documentation and established deadlines for the submission of this documentation.

Under the regulations established by the Commissioner of Education, the decision of the Financial Aid and Scholarships Office will be final. Students who satisfactorily meet the criteria for the waiver may have one waiver at the undergraduate level. Those wishing to apply for waivers must do so during the term in which notification of TAP denial was sent.

Reasons for which a waiver may be granted include the following:

1. Verifiable illness of the student or member of the student's immediate family during the semester in which academic standards were not met.

2. Death of a member of the student's family during the semester in which standards were not met

3. Divorce/separation within the student's immediate family creating a demonstrable financial/emotional disruption sufficient to affect progress.

4. Circumstances that the student feels were extenuating; applicants must explain why circumstances were extenuating and beyond their control.

NYS TAP regulations require that students achieve a cumulative C average or the equivalent after receiving four semesters of TAP Grant disbursements.

The regulations also provides that "The President [of the NYS Higher Education Services Corporation] may waive the requirement that a student have a cumulative C average or its equivalent for undue hardship based on: (i) the death of a relative of the student; (ii) the personal injury or illness of the student; or (iii) other extenuating circumstances. . ."

The following guidelines provide the academic progress criteria for receiving NYS TAP Grant funding.

These regulations are subject to legislative change. For additional information on the NYS TAP program visit hesc.ny.gov/pay-for-college/apply-for-financial-aid/nys-tap.html

Academic progress requirements for federal aid programs

I. Purpose of Satisfactory Academic Progress Policy

To be eligible for federal financial aid, students who are U.S. Citizens or eligible non-citizens (i.e. green card) are required by the U.S. Department of Education (34 CFR 668.34) to maintain Satisfactory Academic Progress toward their degree objectives. RIT has established this SAP policy to ensure student success and accountability and to promote timely advancement toward degree objectives. *(Students receiving New York State aid (TAP & HEOP) are subject to additional Satisfactory Academic Progress requirements. Please refer to the following for these requirements: rit.edu/admissions/aid/policies/ugrad-progress*

This policy, except as noted, does not impact RIT institutional financial aid, however RIT merit based and endowed scholarships may have other criteria for eligibility. Eligibility for NTID specific aid is determined by NTID regardless of SAP status. A student who does not meet the conditions for renewal of RIT or NTID funding is notified separately. It is also worth mentioning that the criteria for measuring SAP for federal financial aid purposes have some differences from RIT academic measurements.

Table 1

Programs Subject to Federal Financial Aid SAP Policy
Federal Pell Grant
Federal Supplemental Opportunity Grant (SEOG)
Federal Work-Study
Federal Direct Loans (subsidized and unsubsidized)
Federal Direct Parent PLUS Loans

II. Definition of Federal Satisfactory Academic Progress (SAP) and SAP Status

At RIT, to be eligible for federal financial aid, as identified above, students must maintain Satisfactory Academic Progress as defined by the following criteria:

- Meeting a minimum Semester Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) requirement
- Completing the degree objective within a maximum number of credits attempted (Maximum Attempted Credits Allowance)
- Earning a minimum number of credits each semester to ensure timely progress toward degree completion (Pace)

If students do not meet one or more of the above criteria they will be considered ineligible for Federal Financial Aid unless placed on *Federal Financial Aid Warning* or granted *Federal Financial Probation status*. *Federal Financial Aid Warning* allows students to continue to receive federal financial aid even though they are not making SAP. It allows students one semester to regain federal SAP without having to request consideration for *Federal Financial Aid Probation*. Students must request *Federal Financial Aid Probation* and provide a Federal SAP Action Plan developed in conjunction with the designated individual within your academic unit. If you are granted Federal Financial Aid Probation, you must follow the Federal SAP Action Plan that outlines how you will regain SAP within a prescribed time frame.

The following explains each of the federal SAP evaluation criteria:

TAP Satisfactory Academic Progress Standards (for non-remedial (HEOP) students who received their first TAP award in 2010-2011 and thereafter)

BACHELOR'S DEGREE—SEMESTER CALENDAR								
Before being certified for this payment	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**
a student must have accrued at least this many credits	0	6	15	27	39	51	66	81
with at least this grade point average	0	1.5	1.8	1.8	2.0	2.0	2.0	2.0
AND complete the following minimum number of credits in the previous term a state grant or scholarship was received	0	6	6	9	12	12	12	12

TAP Satisfactory Academic Progress Standards (for non-remedial (HEOP) students who received their first TAP award in 2010-2011 and thereafter)

ASSOCIATE DEGREE—SEMESTER CALENDAR						
Before being certified for this payment	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**
A student must have accrued at least this many credits	0	6	15	27	39	51
with at least this grade point average	0	1.3	1.5	1.8	2.0	2.0
AND complete the following minimum number of credits in the previous term a state grant or scholarship was received	0	6	6	9	9	12

TAP Satisfactory Academic Progress Standards for remedial (HEOP) students who received their first TAP award in 2006-2007 and thereafter

BACHELOR'S DEGREE—SEMESTER CALENDAR										
Before being certified for this payment	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	8th	**9th**	**10th**
A student must have accrued at least this many credits	0	3	9	21	33	45	60	75	90	105
with at least this grade point average	0	1.1	1.2	1.3	2.0	2.0	2.0	2.0	2.0	2.0
AND complete the following minimum number of credits in the previous term a state grant or scholarship was received	0	6	6	9	9	12	12	12	12	12

Please note: Only students in the HEOP program are eligible for more than four years of undergraduate awards.

A. Grade Point Average Requirements

To maintain federal SAP, undergraduate students must meet a minimum semester grade point average and minimum cumulative grade point average of at least **2.0** for each enrolled semester. Tables 2 and 3 below demonstrate how specific grades and course types affect student grade point averages.

Table 2
Impact of Grades on Cumulative and Semester GPA Calculation

Grade Earned	Counted in Grade Point Average for Federal SAP
A, B, C, D, F (+/-)	Yes
I — Incomplete*	Yes *(note that incompletes are counted as "F" grades for SAP GPA calculations)*
S — Satisfactory	No
SE (Satisfactory), PE (Pass), UE (Pass) and NE (No Pass) Designation allowed for only the following semesters: Spring 2020, Fall 2020, Spring 2021, and Fall 2021	No
W — Withdrawal	No
AU — Audit	No
NG — Non-graded	No
X — Credit by Exam or Experience	No
Missing Grade	No

* Incomplete grades are not calculated as completed credits and are assumed to be failing grades when determining a student's GPA and CGPA. Students cannot retroactively restore their eligibility for Federal aid programs for a subsequent semester unless they make up the incompletes PRIOR to the start of the next semester they would attend after receiving an Incomplete grade or by being placed on Federal Financial Aid Probation.

Table 3
Impact of Course Type on Cumulative GPA Calculation

Course Type	Counted in Grade Point Average
Repeated course work – Most Recent Final Grade	Yes
Repeated course work – Previous Grades	No
Transfer course work (pre- and post-matriculation)	No
Grade Exclusions	No

For more information about grading policy, please visit the RIT Educational Policies at https://www.rit.edu/academicaffairs/policiesmanual/d050

B. Maximum Attempted Credits Allowance

The number of credits that are normally required to earn a degree are multiplied by 150%, to determine the maximum attempted credits allowance students can have while pursuing their degree. The number is compared to the total number of credits you have attempted, inclusive of all transfer credit, test credit and credits attempted at RIT. Once students have exceeded the maximum attempted credits allowance they are no longer eligible to receive federal financial aid.

For example, Robert is in a BS program in engineering that requires 128 credits, therefore the maximum attempted credit allowance for Robert is 192 (128 X 150%). Robert transferred in 50 credits and has attempted 100 credits while at RIT, for a total of 150 credits attempted. So, Robert can attempt 42 (192-150) more credits before he would lose his federal aid eligibility. *(Notice that we must include all attempted credits and not only earned credits.)*

Double Major: Because a double major program leads to a single Bachelor's degree, each of the two majors must be associated with the same degree type (i.e., both must be registered as a BS degree or both must be registered as a BFA degree). If students are in an

approved double major the 150% measurement applied to the program with the larger number of required credits. For example, a BFA requires 120 credits and a second BFA requires 124 credits. The 150% calculation is based on the BFA requiring 124 credits (i.e. 124 x 150% = 186 maximum attempted credit allowance).

Dual Degree: A dual degree program is one in which the student works towards satisfying the academic requirements for two distinct degree types in an integrated fashion. Currently at RIT at the undergraduate level, this option applies solely to those students who aspire to earning the Bachelor of Science (BS) and the Bachelor of Fine Arts (BFA) in a single program of study. If students are in an approved dual degree program the 150% measurement applies to the program with the smaller number of required credits plus an additional 30 credits. For example a BS requires 129 credits and a BFA requires 120 credits, the 150% calculation is based on the BFA requiring 120 credits plus the additional 30 credits (i.e. [(120 x 150% = 180) + 30 = 210] maximum attempted credit allowance).

Minors: A minor must be declared prior to the completion of major program of study requirements or last semester of attendance whichever comes first and must be part of the Registrar record. The minor will be considered part of the student program of study for SAP determination.

The minor must be completed within the 150% timeframe rule for attempted credits for major program of study. There is no limit to the number of minors students may obtain as long as it is within the 150% Rule for SAP policies. The 150% timeframe is monitored by ALL attempted and completed course work, regardless of change in major.

Students may continue with federal and institutional aid as long as they meet all other eligibility requirements.

Cooperative Education: Student who are not making SAP in the term prior to participating in cooperative education (co-op) and seeking federal aid must contact the Office of Financial Aid and Scholarships.

C. Pace

The cumulative number of earned credits divided by the total cumulative credits students have attempted gives us the percentage of attempted course work you must complete each time they are evaluated. At RIT, this value is 67% (no rounding is allowed).

If students earn less than 67% of the credits they have attempted they will be considered to not be making SAP and potentially could lose their federal aid eligibility.

For example, Roberta is a student who has attempted 85 credits and completed 60 credits. She is making "Pace" because she has completed 70.5% of her attempted credits. Ian is a student who has attempted 32 credits and completed 20 credits. He is not making "Pace" because he has only completed 62.5% of his attempted credits.

Tables 4 and 5 demonstrate how grades and course types will affect students' Maximum Attempted Credits Allowance and Pace of Progression calculations:

Table 4
Impact of Grades on Pace and Maximum Attempted Credits Allowance (Pace is the 67% measurement and Maximum Attempted Credits Allowance is 150% of degree program credits.)

Grade Earned	Pace		Counted Toward Maximum Attempted Credits
	Units Attempted	Units Completed	
A, B, C, D (+/-)	Yes	Yes	Yes
F, I, W	Yes	No	Yes
SE (satisfactory) and PE (Pass) UE(Pass). Designation allowed for only the following semesters: Spring 2020, Fall 2020, Spring 2021, and Fall 2021	Yes	Yes	Yes
NE (No Pass) Designation allowed for only the following semesters: Spring 2020, Fall 2020, Spring 2021 and Fall 2021	Yes	No	Yes
S (Study Abroad Courses)	Yes	Yes	Yes
X — Credit by Exam or Experience	Yes	Yes	Yes
AU, NG	No	No	No

Table 5
Impact of Course Types on Pace of Progression and Maximum Attempted Credits Allowance

Grade Earned	Pace		Counted Toward Maximum Attempted Credits
	Units Attempted	Units Completed	
Repeated course work (previous passing grade)	Yes	No	Yes
Repeated course work (previous failing grade)	Yes	No	Yes
Transfer course work (pre- and post-matriculation)	Yes	Yes	Yes
Grade Exclusions – passing grades	Yes	Yes	Yes
Grade Exclusions – failing grades	Yes	No	Yes

III. How and When Federal Satisfactory Academic Progress is Monitored

The Office of Financial Aid and Scholarships utilizes information from the Registrar to monitor the Semester and Cumulative Grade Point Average requirements, Maximum Attempted Credits Allowance and Pace. Satisfactory Academic Progress is monitored for all undergraduate students at the end of each enrolled semester after grades have been made official by the Registrar.

The Office of Financial Aid and Scholarships cannot complete the SAP evaluation until prior semester grades have been officially posted. Otherwise eligible students who are in a *Federal Financial Aid Warning* or *Federal Financial Aid Probation* period may experience a delayed financial aid disbursement if grades are not made official before the beginning of the subsequent semester. Likewise it is possible for students to have federal aid disbursed to their account

that would need to be reversed if it is determined that students not making SAP. No exceptions can be made to this process. Additionally, because financial aid offers may be released prior to Registrar receiving grade information, it is possible that students may receive an aid package that is subsequently revised because it is determined that students are not making federal SAP after the initial offer notification is provided.

IV. Failure to Maintain Federal Satisfactory Academic Progress

The Office of Financial Aid and Scholarships will notify students if they are not meeting federal SAP requirements via their RIT email address. If students are meeting Federal Satisfactory Academic Progress requirements they will not receive a SAP notification.

A. Failing to Meet GPA and/or Pace Requirements

If students do not meet the Semester GPA or Cumulative GPA or Pace requirements they may be placed on a one-time, one-semester **Federal Financial Aid Warning**. This status applies only if students have never been on *Federal Financial Aid Warning* while attending RIT and are currently not making Federal Financial Aid Satisfactory Academic Progress nor on *Federal Financial Aid Probation*.

Students may continue to receive federal financial aid for one semester on this status. This status is provided automatically; no appeal is considered nor required.

It is also important to remember that students will be placed on this status regardless if they are a federal aid recipient for the semester they are designated on *Federal Financial Aid Warning*. If students regain eligibility by meeting SAP standards at the end of the warning period and subsequently fall below the standards they will be considered ineligible for federal financial aid without an approved *Federal Financial Aid Probation*.

If students do not meet the minimum SAP requirements by the end of the one-semester *Federal Financial Aid Warning* for federal SAP violations they will no longer be considered to be making Satisfactory Academic Progress and will become ineligible for federal financial aid without an approved *Federal Financial Aid Probation (see section V. B)*.

B. Exceeding the Maximum Attempted Credit Allowance

Students who reach the Maximum Attempted Credits Allowance are ineligible for further federal financial aid. The Office of Financial Aid and Scholarships may make an exception based upon a review of the students academic record. The office will notify you if it will allow for an exception consideration and provide guidance for additional steps that you will need to take. Consideration for an exception does not guarantee an exception. If granted an exception, students must complete all course requirements as outlined in their Academic Plan to Graduation document and they must graduate within the timeframe outlined in their plan as well. If students do not follow one or more of the conditions outlined in their plan, they will no longer be eligible for federal aid.

V. Regaining Federal SAP and Financial Aid Eligibility after not making SAP

If students are not making SAP there are two ways they may regain it:

A. Meet all SAP requirements

B. Appeal for Federal Financial Aid Probation

Students not meeting SAP may request to be placed on Federal Financial Aid Probation. It is critical that the application guidelines and time lines be followed as detailed below.

1. Federal Financial Aid Probation

If students are not meeting SAP, they may be granted this classification upon successfully outlining the reasons for not being able to attain SAP requirements and being able to demonstrate that SAP requirements will be met within a prescribed time frame. If the appeal is approved, students may continue to receive federal financial aid. While it is possible for students to remain on *Federal Financial Aid Probation* for consecutive semesters, students may not be on this status for more than three consecutive semesters.

Additionally, understand that students in a BS program who have been on *Federal Financial Aid Probation*, regained SAP, who then later lose SAP may only be granted one additional *Federal Financial Aid Probation* while attending RIT as an undergraduate. This also applies to students who while on *Federal Financial Aid Probation*, fail to meet the Federal SAP Action Plan outlined, appeal and are granted an additional *Federal Financial Aid Probation* status. In other words, students may be granted *Federal Financial Aid Probation* twice, with each *Federal Financial Aid Probation* lasting a maximum of three semesters.

Exceptions: If students are enrolled in an associate degree program they are limited to one Federal Financial Aid Probation which cannot be more than two semesters in length.

If students are enrolled in a certificate program they are limited to one Federal Financial Aid Probation, lasting no longer than one semester in length.

Federal Financial Aid Probations are counted cumulatively. For example, if students begin an associate degree program, use a *Federal Financial Aid Probation*, and then transfer into a baccalaureate program, the *Federal Financial Aid Probation* used in the associate degree program will count toward the two allowable *Federal Financial Aid Probations* in the baccalaureate program. Conversely, if students began in a baccalaureate program, use one *Federal Financial Aid Probation*, and transfer into a certificate program, they would not be eligible for a *Federal Financial Aid Probation* since a certificate program only provides for one *Federal Financial Aid Probation*.

2. How to submit a Request for Federal Financial Aid Probation

For consideration of *Federal Financial Aid Probation* students MUST have a Federal SAP Action Plan provided by the appropriate individual within their primary academic unit that will outline what is needed to be accomplished academically in order to regain SAP. This process is initiated by students completing the Request for Federal Financial Aid Probation form. The request must articulate the reason(s) why students were unable to meet the SAP requirements and provide complete documentation as appropriate

(i.e. medical reasons must have appropriate medical documentation to support the claim). Students need to attach their Federal SAP Action Plan to their Request for Federal Financial Aid Probation form available on the Office of Financial Aid and Scholarships website. (www.rit.edu/sap).

Incomplete appeals will automatically result in a denial of the appeal. All appeals are reviewed by the Federal SAP Committee within the Office of Financial Aid and Scholarships. If student appeals are denied it means students cannot receive federal aid until they regain SAP.

3. When to Submit a SAP Appeal for Federal Financial Aid Probation
Students should **not** submit a request for *Federal Financial Aid Probation* if they are on a *Federal Financial Aid Warning* status. These pre-emptive appeals are unnecessary and will be withdrawn. Rather, studnets should wait until they have been notified by the Office of Financial Aid and Scholarships that they are ineligible for financial aid because of a federal SAP deficiency. **If students have no intention of using federal aid, they should not request Federal Financial Aid Probation.**

Appeals for *Federal Financial Aid Probation* should be submitted as soon as possible after students have been notified of the loss of eligibility for federal aid, but not later than five weeks after their next semester of enrollment. For summer semester all appeals must be submitted no later than three weeks. Financial aid cannot be reinstated retroactively for a past semester.

If students are appealing their federal SAP status, they must meet all financial aid application deadlines and other eligibility requirements.

4. If students change a pass/fail grade to a letter grade or have an Incomplete (I) grade change, the change will be considered in their next semester of attendance. For example, a grade change occurs in the fall 2021 semester, the change for federal SAP would be considered in the spring 2022 semester. It is not necessary for students to notify us, since we capture the changed grade the next semester we review students SAP.

Students may, as an option, notify us of a change in their academic record in writing. Email is acceptable, but they must use their RIT email account. The change in their academic record must occur prior to the start of their next semester of attendance.

5. Notification of Federal SAP Appeal Decisions
Appeals for Federal Financial Aid Probation will be evaluated by the Office of Financial Aid and Scholarships. Students will be notified of the decision via email to their RIT email address.

VII. QUICK REFERENCE CHART FOR FEDERAL SAP

Table 6

MEASUREMENT	REQUIREMENT
Semester GPA	2.0
Cumulative GPA	2.0
Pace (total completed credits divided by total attempted credits)	67%
Maximum Allowable credits	Standard number of credits required to attain degree x 150%

SAP STATUS	ALLOWANCES
Federal Financial Aid Warning	1 per entire undergraduate study at RIT. May not be granted if placed on Financial Aid Satisfactory Academic Progress Contract or Federal Financial Aid Probation previously.
Federal Financial Aid Probation based on degree program. These are treated cumulatively.	**Baccalaureate** – Maximum of 2, each lasting no longer than 3 consecutive semesters. **Associate** – Maximum of 1, lasting no longer than two semesters. **Certificate** – Maximum of 1, lasting no longer than one semester.

Questions regarding the SAP policies outlined in this document or how to apply for *Federal Financial Aid Probation* should be directed to the Office of Financial Aid and Scholarships at 585-475-2186 or via email at ritaid@rit.edu.

Questions regarding a student's academic record should be directed to the Registrar's Office at 585-475-2821 or via email at registrar@rit.edu.

Questions regarding what students need to accomplish in order regain SAP should be directed to their primary academic unit.

Academic progress requirements for RIT grants and scholarships

RIT Grants and Scholarships are renewed as long as students are enrolled full-time, making progress toward degree requirements, and meets all other eligibility criteria. Extending RIT Grants and Scholarships more than two semesters beyond the normal program completion requirements for credit eligible coursework are reviewed to determine continuation of aid eligibility. Academic requirements and award duration for merit or special-purpose scholarship programs sponsored by RIT may differ from those used in RIT's need-based programs. Recipients are advised of merit scholarship terms and conditions at the time awards are made.

Financial aid refund policy

Return of federal funds

In accordance with federal regulations, the Office of Financial Aid and Scholarships recalculates federal aid eligibility for students who withdraw, drop out, are suspended, or take a leave of absence prior to completing more than 60 percent of a term.

"Withdrawal date" is defined as the actual date the student initiated the withdrawal process, the student's last date of recorded attendance, or the midpoint of the semester for a student who leaves without notifying the university. Recalculation is based on the percent of earned aid using the following formula: number of days completed up to the withdrawal date/total days in the semester. Aid returned to federal programs is then equal to 100 percent minus the percentage earned multiplied by the amount of federal aid disbursed.

Funds are returned to the federal government in the following sequence: Federal Direct Unsubsidized Loans, Federal Direct Subsidized Loans, Federal Graduate PLUS, Federal Parent PLUS Loans, Federal Pell Grants, Federal SEOG, other federal grants.

Late disbursement

If the student is otherwise eligible, the first disbursement of Federal Direct Subsidized Loan or Federal Direct Unsubsidized Loan proceeds is allowed up to 180 days after the student has ceased to be enrolled. Subsequent disbursements are not allowed.

State scholarships

Regulations vary. Any adjustments are done in accordance with the specific requirements of the sponsoring state.

Privately funded grants and scholarships

In the absence of specific instructions from the sponsor, 100 percent of the semester offer will be credited to the student's account.

RIT grants and scholarships

Institutional funding such as RIT grants and scholarships are prorated based on the tuition refund schedule for withdrawal during a semester.

Student financial aid rights and responsibilities

In the Office of Financial Aid and Scholarships assistant directors are assigned to RIT's colleges to serve as a financial aid point of contact for students within each college. Also, as financial aid recipients, students have certain rights and responsibilities, including the following:

- The right to privacy. All records and data submitted with student applications for financial aid will be treated as confidential information.
- The right to a complete explanation of the financial aid process. If students do not understand their financial aid or feel their application has not been evaluated fairly, they should contact the Office of Financial Aid and Scholarships.
- The right to be notified of cancellation or withdrawal of aid. As part of this notification students have the right to be told why this action is being taken.
- The right to appeal. An administrative appeal process has been established to review student requests for reconsideration. If students wish to appeal their financial aid offer, they must submit a request in writing (including supporting documentation) to the Office of Financial Aid and Scholarships.
- The responsibility to immediately report any change in student status. If students move, change their name, drop below full-time status, withdraw from school, or do anything else that affects their status, students must report it to the Office of Financial Aid and Scholarships, and to any student loan lender.
- The responsibility to report any significant changes in their financial situation during the year to the Office of Financial Aid and Scholarships for review. These changes may require a revision to a student's financial aid.
- The responsibility to report any additional funds or benefits to the Office of Financial Aid and Scholarships. These funds may include private scholarships, tuition waivers, Vocational Rehabilitation, and Veterans Benefits. The Office of Financial Aid and Scholarships is required by law to make adjustments to a student's offer if additional funds or benefits create an overaward after the original offer of aid has been made.
- The responsibility to use financial aid for education expenses. These expenses may include tuition, fees, room, board, books, supplies, and living expenses.
- The responsibility to respond to any inquiries from federal, state, or college auditors.
- The responsibility to repay student loans on time. Acceptance of any loan carries a serious obligation to repay. Students who do not meet this repayment obligation may affect the availability of loans for future students. Before you accept student loans, you should consider the repayment obligation.
- The responsibility to keep copies of all correspondence regarding their financial aid, whether it is with the Office of Financial Aid and Scholarships, governmental agencies or outside lenders.

Restricted and Endowed Scholarships

Each year the university offers restricted and endowed scholarships, made possible through the generosity of hundreds of individuals and organizations. Offers are made by RIT's Office of Financial Aid and Scholarship or RIT academic departments in accordance with the special criteria of each scholarship. All applicants for financial aid are automatically considered for scholarships for which they meet the established criteria and are notified if selected Recipients are encouraged to write a note of appreciation to the donor.

University Policies and Procedures

Academic Policies and Procedures

At RIT, we shape the future and improve the world through creativity and innovation. As an engaged, intellectually curious, and socially conscious community, we leverage the power of technology, the arts, and design for the greater good. Moreover, RIT sets high standards that challenge students to develop values that will enhance their lives professionally and enable them to contribute constructively to society.

Graduation requirements

To earn an academic credential from RIT, students must satisfy a number of graduation requirements, which may vary significantly from program to program. All students should seek out and use the academic advising resources within their colleges to assist them in planning their academic program of study. In general, students should expect to satisfy the following requirements before they can graduate from RIT:

A. Completion of academic curricula

I. Students must satisfactorily complete all of the courses in their academic program. General education requirements and specific course requirements for each program are identified in the following pages. This bulletin, and careful consultation with an academic advisor, provide the best resources for planning and completing all of the requirements necessary for graduation.

II. Program curricula may include several types of courses, including cooperative education, field experience, practicum, thesis, research, and wellness. Most students will need to satisfy a wellness requirement, and many academic programs require one or more semesters of experiential learning, including cooperative education or internships.

III. The curriculum in effect at the time of admission into a program will normally be the curriculum one must complete in order to graduate. Occasionally, with departmental approval, course substitutions and other minor curricular modifications may occur. Although there is no time limit within which students must complete their course requirements, the curriculum under which a student is certified to graduate must be no more than seven years old.

B. Grade-point average standard

I. Successful candidates for an undergraduate degree, diploma, or certificate must have a cumulative grade-point average of at least 2.0. The physician assistant program requires semester and cumulative grade-point averages of 3.0 or higher.

II. Graduation honors are conferred on associate and bachelor's degree recipients who achieve a 3.40 or higher cumulative program GPA.

C. Residency and minimum earned hours

A minimum of 25 percent of the total semester credit hours required for the degree shall consist of successfully completed RIT courses. The degree-granting program shall decide which specific courses shall count to satisfy this requirement. Credit earned through transfer, credit by exam/experience, College-Level Examination Program (CLEP), Advanced Placement (AP), International Baccalaureate (IB), or audit is excluded from these residency calculations. RIT academic programs vary as to the total number of credit hours required; however, under no circumstances will a student be allowed to graduate with a bachelor's degree with fewer than 120 cumulative earned hours (60 hours for associate degrees). Cumulative earned hours include RIT courses, transfer credit, credit by exam/experience, CLEP, AP, and IB credits.

D. Developing writing excellence

Following university policy, all students are required to complete three writing intensive (WI) courses before they graduate:

- one First Year Writing (FY-WI) course, to be taken in the first year;
- one Programmatic WI (PR-WI) course, year taken as required by the particular degree program; and
- a third WI course, preferably within General Education (GE-WI) but may be a second program WI course, to preferably be taken in the second or third year.

First Year Writing is a General Education foundational course that plays an essential role in students' academic transition to the university. In FYW, students learn about the social and intellectual aspects of university writing, and develop critical literacy practices required for academic success. There are currently two FYW courses that fulfill this requirement:

- FYW: Writing Seminar (UWRT-150)
- FYW: Ethics in Computing (ISTE-110)

General Education Writing Intensive (WI) courses reinforce the knowledge and practices introduced in FYW. These courses are located throughout the perspective, immersion, and elective course categories on the General Education curriculum and use writing to engage students in course content.

Programmatic Writing Intensive courses (identified on the typical course sequence charts with the designation "WI") are taken as part of a degree program. These courses are designed to engage students in writing in the discipline/s represented by the course. They reinforce the knowledge and practices introduced in FYW and GE WI courses, and help students gain mastery of written forms specific to the student's major area of study

E. Fulfillment of financial obligations

Students must fulfill all financial obligations to RIT before a diploma will be released.

General Education Curriculum–Liberal Arts and Sciences

RIT's framework for general education provides students with courses that meet specific university approved general education learning outcomes and New York State Education Department liberal arts and sciences requirements. Students in all bachelor of science degree programs are required to complete a minimum of 60 credit hours in General Education; students in all bachelor of fine arts degree programs are required to complete a minimum of 30 credit hours in General Education. The general education framework intentionally moves through educational phases designed to give students an introduction to perspectives of liberal arts and sciences disciplines and then the opportunity for deeper, advanced study and integrative learning through immersion in a cluster of related courses.

The general education curriculum consists of the following requirements:

1. First Year Writing—this course provides a focus on writing and communication skills, which prepares students for course work and career expectations. This course, which is typically taken in the first year, plays an essential role in students' transition from secondary to post-secondary education.

2. Perspectives—courses are designed to introduce students to seven key areas of inquiry that develop ways of knowing about the world. The perspective courses introduce students to fundamentals of a liberal arts and sciences discipline (methods, concepts, and theories) while addressing specific general education learning outcomes. Number required and selection of perspectives courses varies by degree type (e.g., BS, BFA, AS, or AAS) and degree program. See individual degree program requirements for details.

a. Perspective 1 (ethical): Courses focus on ethical aspects of decision-making and argument, whether at the individual, group, national, or international level. These courses provide students with an understanding of how ethical problems and questions can be conceived and resolved, and how ethical forms of reasoning emerge and are applied to such challenges.

b. Perspective 2 (artistic): Courses focus on the analysis of forms of artistic expression in the context of the societies and cultures that produced and sustained them. These courses provide insight into the creative process, the nature of aesthetic experience, the fundamentals of criticism and aesthetic discrimination, and the ways in which societies and cultures express their values through their art.

c. Perspective 3 (global): Courses in this category encourage students to see life from a perspective wider than their own and to understand the diversity of human cultures within an interconnected global society. Courses explore the interconnectedness of the local and the global in today's world or in historical examples, and encourage students to see how global forces reverberate at the local level.

d. Perspective 4 (social): Courses focus on the analysis of human behavior within the context of social systems and institutions. Because RIT recognizes that student success depends on the ability to understand how social groups function and operate, these courses provide insight into the workings of social institutions' processes.

e. Perspective 5 (natural science inquiry): Science is more than a collection of facts and theories, so students are expected to understand and participate in the process of science inquiry. Courses focus on the basic principles and concepts of one of the natural sciences. In these classes, students apply methods of scientific inquiry and problem solving in a laboratory or field experience.

f. Perspective 6 (scientific principles): Courses focus on the foundational principles of a natural science or provide an opportunity to apply methods of scientific inquiry in the natural or social sciences. Courses may or may not include a laboratory experience.

g. Perspective 7A, 7B (mathematical): Courses focus on identifying and understanding the role that mathematics plays in the world. In these courses, students comprehend and evaluate mathematical or statistical information and perform college level mathematical operations on quantitative data.

3. Immersion—an approved series of at least three related general education courses that further broaden a student's judgment and understanding within a specific area through deeper, advanced learning.

4. General Education electives—The remaining general education elective credits may be specified by the academic programs in order for students to fulfill supporting requirements for specific degree programs (e.g. math or science, foreign languages, etc.). Some of these credits may be general education electives that can be chosen by the students themselves. Credits in the perspectives category that exceed the minimum requirement will be applied toward the elective credits.

Wellness Education Requirement

RIT recognizes the need for wellness education in today's society and offers specifically designed courses to help students develop and maintain a well-balanced healthy lifestyle. The wellness education requirement is designed to assist students in making healthy decisions to support their academic and social interactions in college and beyond. The wellness curriculum provides learning experiences that are an integral part of the educational experience at RIT.

Students seeking a bachelor's degree: Students seeking a bachelor's degree must successfully complete two different wellness activity courses. *(Important note: Different courses would include different levels of and/or forms of a course that may have the same course number (e.g., pilates and advanced pilates would count as two different activity courses).*

Students seeking an associate degree: Students seeking an associate degree must successfully complete one wellness activity course.

Transfer students: Transfer students may apply course work successfully completed at a previous institution. The student's home department will determine and make decisions regarding transfer of health, wellness, or activity courses. The Center for Intercollegiate Athletics and Recreation is available for consultation.

Exemption Scenarios

Age: Students who are 25 or older *at the date of matriculation* are exempt from the wellness education requirement but may enroll in any course on a space-available basis.

Club sports participation: Students participating in an RIT-recognized club sport may be granted one activity course credit for the year of participation. Participation on the same club team for multiple seasons (e.g., four seasons) can be counted only one time for activity course credit toward the graduation requirement. Students must see the club sports advisor before the end of the spring quarter add/drop period to facilitate the credit process.

Credit by experience: Retroactive credit *may* be granted for certain independent activities if completed within one year before matriculation at RIT. A formal written request must be submitted that clearly outlines the activity that is being considered for wellness education credit along with all documentation of the experience (e.g., signatures of instructors, copy of certificates, receipt from a course or seminar completion). A minimum of 16 hours of a previous activity is required. Formal requests should be submitted to the director of the Wellness Instructional Program.

Intercollegiate athletics: Students participating in the university's intercollegiate athletic program will be granted wellness activity course credit for the season(s) of participation.

Intramural participation: No credit is granted for intramural sports participation.

Medical excuse: A medical excuse may exempt students from participation in the activity segment of the graduation requirement, but they must still enroll in First-Year Enrichment (during their freshman year). The exemption will be granted only by a college dean with input from the associate director of wellness for the Center for Intercollegiate Athletics and Recreation. One copy of the medical excuse (signed physician's memo) should be filed with the Center for Intercollegiate Athletics and Recreation and the other copy taken to students' academic department.

Military duty: Students who have completed six months or more of active military duty are not required to complete the wellness education program but are encouraged to enroll in any wellness course on a space-available basis.

Nonmatriculated status: Nonmatriculated students are exempt from the wellness education requirement but are encouraged to enroll in any wellness course on a space-available basis.

Prior bachelor's degree: Students who have acquired a bachelor's degree are exempt from the wellness education requirement.

Academic advising

All undergraduate students are assigned to an academic advisor. Most students also have a faculty advisor. Advisors help students transition into RIT, navigate their curriculum, connect to RIT resources, explore career choices, evaluate progress toward degree completion, and integrate into the RIT community. Students new to the university (freshman and transfers) are required to meet with their academic advisor during their first year. Second and third year students also are expected to meet with their advisor during the academic year. These advising sessions allow students and advisors time to build their advising relationship and plan for success. Students can find their advisors listed on SIS and Tiger Center.

The University Advising Office is an excellent starting point for any questions related to academic advising and student success at RIT. This office coordinates undergraduate advising and targeted student success initiatives. Contact the University Advising Office at 585-475-7128 or advising@rit.edu. For more information, visit the University Advising Office website (rit.edu/advising) or contact the University Advising Office at advising@rit.edu.

Academic policies

www.rit.edu/academicaffairs/policiesmanual/

For the most up-to-date information on academic policies, please visit the Student Policy Library–**www.rit.edu/academicaffairs/policiesmanual/policies/student.**

Confidentiality of student records

In accordance with the Family Education Rights and Privacy Act of 1974 (commonly known as the Buckley Amendment), RIT students have the right to inspect, review, and challenge the accuracy of their official educational records. Students are also accorded the right to receive a formal hearing if dissatisfied with responses to questions regarding the content of the record.

RIT policy ensures that only proper use is made of such records. Therefore, with the exception of copies made for internal use (those provided to faculty and staff who have a legitimate need to know their contents), in most cases no copy of a student's academic record (transcript) or other nonpublic information from student records will be released to anyone without the student's written authorization. The determination of those who have a "legitimate need to know" (e.g., academic advisors, government officials with lawful subpoenas, etc.) will be made by the person responsible for the maintenance of the record. This determination will be made carefully, in order to respect the student whose record is involved. If an employer, for example, requests a transcript, he or she will have to obtain a written request from the student or former student.

The **Buckley Amendment** allows RIT to declare certain pieces of information as "directory" and therefore releasable without the specific permission of a student. Such "directory information" could include a student's name, date and place of birth, major field of study, participation records in official RIT activities and sports, weight and height of a member of an athletic team, dates of attendance at RIT, and degrees and awards received. Students may make written request of the Office of the Registrar that such directory information not be released. Because requests for nondisclosure will be honored by RIT for only one year, requests to withhold such information must be submitted to the Office of the Registrar annually.

Copies of the full act and RIT's written policies relating to compliance with the law are on file in the Office of the Registrar. Also available is information regarding a student's right to file a

complaint with the U.S. Department of Education concerning the alleged failure of RIT to comply with the requirements for this act.

Transcripts

A student's official academic record is maintained by the RIT Office of the Registrar and is normally reflected through a transcript. All requests for transcripts must be made online through the official RIT transcript service. Details can be found on the Office of the Registrar's website. Requests should include the student's full name (or name used while at RIT), student identification number, and dates of attendance to assure proper identification of the record requested.

Transcripts from high schools and universities that have been received in support of admission applications and/or transfer credit evaluation will not be reissued by RIT.

Transfer credit

Transfer credit at the undergraduate level will usually be granted for those courses completed with a grade of C or better in other regionally accredited colleges or universities and specific armed services course work that parallels courses in the program (including options, if any) for which the student is applying or is currently enrolled. However, if the program (or option) that the student finally chooses to pursue does not include any or all of the courses evaluated, they will not be credited toward requirements for a degree. The acceptance or denial of transfer credit, however, is not decided exclusively on the basis of the accreditation of the sending institution or the mode of delivery, but rather considers course equivalencies, including the expected learning outcomes compared with those of the receiving program's curricula and standards. RIT students who wish to take courses at other accredited institutions and receive transfer credit toward their RIT degree need to secure the prior written approval of the advisor(s) of the RIT college(s) concerned in order to assure appropriateness of the course content and course level for those courses. Under no circumstances can a recipient of a two-year associate's degree from another institution receive more than two years' transfer credit for that degree. However, applicable courses successfully completed beyond the associate's degree at the upper division or equivalent level may transfer to the student's intended program.

Deaf and hard-of-hearing students may transfer into an NTID program, or they may qualify for transfer directly into a program in another RIT college with NTID sponsorship. The transfer credit of deaf students accepted to NTID's Summer Vestibule Program will be evaluated in the fall when they are accepted into a specific program.

Credit by exam: RIT grants credit for satisfactory scores on examinations covering objectives and contents parallel to the RIT courses for which students seek credit. Usually these are Advanced Placement (AP), International Baccalaureate (IB), College-Level Examination Program (CLEP), New York state proficiency examinations, or RIT-prepared examinations.

Advanced placement: Many students earn advanced standing through Advanced Placement (AP) examinations. **The minimum required score and the manner in which credits are applied depend upon a student's exam score and choice of academic program.** No credit is awarded for scores of 1 or 2 on AP exams. Advanced Placement credits may be applied in fulfillment of general education, program requirements, and/or minor requirements. Students may need to complete additional course work in order to fulfill all specific program requirements. Students should consult with their advisor for additional details. The policy covering the awarding of credit for Advanced Placement examinations is reviewed annually and may be subject to change.

International baccalaureate: Many students earn advanced standing through International Baccalaureate (IB) examinations. **The minimum required score and the manner in which credits are applied depend upon a student's exam score and choice of academic program**. International Baccalaureate credits may be applied in fulfillment of general education, program requirements, and/or minor requirements. Students may need to complete additional course work in order to fulfill all specific program requirements. Students should consult with their advisor for additional details. The policy covering the awarding of credit for International Baccalaureate examinations is reviewed annually and may be subject to change.

College Level Examination Program: The College Level Examination Program (CLEP) is a nationwide system of credit by examination offered by the College Board. Any person entering college, presently attending college, or out of college may take CLEP examinations and seek credit by submitting the test results to RIT for evaluation. Credit recommendations for CLEP vary depending on the subject and examination results. CLEP examinations are offered through the RIT Counseling Center.

The grading system

RIT uses a plus/minus grading system. All grades are determined and issued by the faculty in accordance with the RIT Institute Policies and Procedures Manual and the particular standards of the attempted courses. Individual instructors have an obligation to carefully describe the standards and grading practices of each course. The accepted RIT letter grades are as follows:

GRADE	DESCRIPTION
A	Excellent
A-	
B+	
B	Above Average
B-	
C+	
C	Satisfactory
C-	
D	Minimum Passing Grade
F	Failure
AU	Audit (Indicates a student has officially registered for the course for no credit.)

Additional grades and notations that may be found on a student term record or transcript are shown below:

- I grades are considered temporary and will revert to a grade F unless changed by the faculty within a prescribed period of time.
- R, S, U, WV, and X grades are restricted to specific types of courses.

For more specific descriptions and procedures concerning the above, see Section D5.0and D2.0, Institute Policies and Procedures Manual. The manual is available online at rit.edu/policies.

Course registration

To be officially registered at RIT, a student must be academically eligible, have been properly enrolled in a course, and have made the appropriate financial commitment. Typically, students start selecting courses six to eight weeks before the academic term begins and can register online. The registration period ends on the seventh calendar day (excluding Sundays and holidays) of the full fall, spring and summer terms. These first seven days (excluding Sundays and holidays) of the term are typically known as the Add/Drop period. Specific dates and procedures can be found in the academic calendar. RIT reserves the right to alter any of its courses at any time.

Students at RIT are free to choose their own courses and course loads. Colleges offering the courses are equally free to restrict enrollment to particular groups of students (for example, students in specific year groups or students who have already satisfied course prerequisites). Most courses also are restricted in class size. Students are strongly encouraged to seek out academic advice and plan their academic careers carefully.

Failure to make appropriate financial commitment, satisfy New York state health immunization requirements, or fulfill course prerequisites can result in the loss of courses for which a student has registered and/or prohibition of future registrations.

Auditing courses

Courses that are taken on an audit basis will not count toward a student's residency requirement. They may not be used to repeat a course taken previously and do not satisfy degree requirements. Permission to audit a course is granted only by the college offering that course. Any changes in registration between credit and audit must be completed prior to the end of the add/drop period.

Withdrawal from courses

BEFORE 80% (11 WEEKS) OF THE TERM IS COMPLETED:
Students are strongly advised to consult with their academic advisor and instructor before they withdraw from any courses. A student may not use the drop with a grade of "W" option to avoid charges of academic dishonesty or after the instructor has officially submitted the final grade.

Prior to the end of the eleventh week of fall or spring term, a "W" will be assigned upon a full-time student's request, providing the student maintains full-time credit status. In processing the request, the student, course instructor, advisor and the home program or department head will be notified via e-mail.

In order for a full-time undergraduate student to withdraw below full-time status, a student must request for special permission from primary program or department leadership. Undergraduate degree seeking students who are enrolled less than full-time may not withdraw from any courses without the approval of primary program or department leadership. (RIT's definition of full-time can be found in policy D02.0.III.E)

If approved, the student, advisor, and course instructor will be notified. If denied, the student has the right to appeal the decision in accordance with the college's appeal process.

AFTER 80% (11 WEEKS) OF THE TERM IS COMPLETED:
After the eleventh week and up to the last official class day of fall or spring term, a "W" will be assigned only with the approval and written signatures of the student, course instructor, the home program or department head, and the dean from the student's home college. For a student whose program is housed outside the college structure, the approval of the director or director's designee of the student's academic unit is required.

In all other academic sessions and for courses offered in time frames different from standard terms, course withdrawal is available upon the student's request until 80% of the session or course as determined by the Registrar's Office has been completed, providing undergraduate students enrolled full-time maintain the credit status outlined above in A.1. After this point and up to the last official class day, a "W" will be assigned only with the approval and written signatures of the student, course instructor, the home program or department head, and the dean from the student's home college. For a student whose program is housed outside the college structure, the approval of the director or director's designee of the student's academic unit is required.

In unusual situations, a "W" may be granted after the last official class day, but this must occur before a final grade is posted. Such an extraordinary request is administered through the Provost's Office, in consultation with (if possible) the student, course instructor, home program or department head, and dean from the student's home college. For a student whose program is housed outside the college structure, the approval of the director or director's designee of the student's academic unit is required.

While a "W" will appear on the student's transcript, it carries no credit and does not affect GPA.

When a student chooses to drop a course with a grade of "W", full tuition is charged. Courses with a "W" assigned do not count toward the residency requirement.

Dean's List eligibility

Degree-seeking students who earn at least 12 credit hours in an academic term, have a grade-point average of 3.40 or better, have not been placed on probation due to a low cumulative grade-point average, and do not have any grades of I, D, or F in that term are eligible for selection to the Dean's List of their college. Students who are pursuing their degree on a part-time basis are assessed

for Dean's List consideration based on course work completed throughout the academic year (fall, spring, summer). Criteria for part-time students are essentially the same as those for full-time students. However, at least 9 credit hours must be earned during the academic year.

Class attendance

Students are expected to fulfill the attendance requirements of their individual classes. Absences, for whatever reason, do not relieve students from responsibility for the normal requirements of the course. In particular, it is the student's responsibility to make individual arrangements prior to missing class. Attendance at class meetings on Saturdays or at times other than those regularly scheduled may be required.

Academic probation and suspension

An undergraduate student must maintain a cumulative and term Grade Point Average (GPA) of 2.00 or above at RIT in order to remain in good academic standing. RIT has set standards to help students maintain satisfactory academic performance, and serve to identify, warn, and provide timely intervention to students experiencing academic difficulty. Probation and suspension outlined below are academic actions.

In addition to the RIT requirements outlined below, individual colleges and/or programs may define more rigorous requirements for maintaining good academic standing. Such requirements must be approved by the Provost's Office, clearly defined within published college policy, and communicated in the university bulletin.

All probation and academic suspension actions are taken at the end of the fall, spring, and summer terms. Students who attempt fewer than 9 credits in a term, and earn a term GPA less than a 2.0, but whose cumulative GPA is 2.0 or higher may be subject to academic action at the discretion of the college.

Probation refers to the academic action taken when a student is not in good academic standing. Students placed on probation are expected to sufficiently raise their GPA so as to return to good academic standing in the succeeding term. Students placed on probation will be required to complete an academic success plan. In consultation with their advisor and written permission of the dean of the college, students on probation may enroll in more than 16 credits. Without consultation with their advisor and written permission from the dean of the college, students on probation may enroll in no more than 16 credits. In some circumstances, a student will also be required to satisfy specific conditions required by the home program. Failure to meet the terms of probation may result in suspension. A student can be placed on probation no more than two terms during a given undergraduate degree level (i.e., associate or bachelor) at RIT. Students on probation who fail to return to good academic standing will be placed on academic suspension through the upcoming fall or spring term, at a minimum.

Academic Suspension refers to the academic action taken when a student is not permitted to enroll in courses at RIT for a minimum of one term. Students who qualify for academic suspension at the end of a spring term will be suspended for the following summer and fall terms. An appeal form can be used by a student to appeal an academic suspension decision.

Deferred Suspension refers to the academic action taken when a student appeals academic suspension and the appeal is granted. Students placed on deferred suspension will have one term to return to good academic standing and will be required to complete an academic success plan with their home program. A student on deferred suspension, enrolled in summer term, and taking 12 or more credits will be subject to the academic action policy and subsequent academic success plan.

Academic Success Plan is an agreement between a student and the student's academic program designed to facilitate success in the program. Students should consult with their academic program to determine the appropriate number of credits per term. Failure to complete the academic success plan may result in suspension.

Policy Statements:

1. Any degree-seeking undergraduate student whose term and or cumulative GPA (see D5.0-Grades, section G) falls below a 2.00 (C average) will be placed on probation.

2. Students placed on probation may in enroll in no more than 16 credits during the probation period and are required to complete an academic success plan with their home/primary program. Students in consultation with their faculty and or professional academic advisor, may appeal to the dean of the college for permission to take more than 16 credits while on probation.

3. A student can be placed on probation no more than two terms during a given undergraduate degree level (i.e., associate or bachelor) at RIT. Students who fail to return to good academic standing will be placed on academic suspension through the upcoming fall or spring term, at a minimum.

4. Any student who has been placed on probation after having been removed from probation will be granted one term to be removed from probation before academic suspension from RIT.

5. Any student whose term grade point average falls below 1.00 is not eligible for probation and will be placed on academic suspension through the upcoming fall or spring term, at the minimum.

6. Students who have been readmitted to RIT after an academic suspension have up to two terms to return to good academic standing. Students who fail to return to good academic standing in two terms will be placed on academic suspension.

7. A student on academic suspension cannot enroll in any credit or non-credit course at RIT while on academic suspension.

8. Students on academic suspension may appeal an academic suspension decision to their primary home department. If the appeal is granted, the student will be placed on deferred suspension for one term. An appeal can be made by completing and submitting an appeal form. Individual colleges and/or programs may set limitations on the number of appeals a student can submit.

9. Decisions regarding deferred suspension require dean (or designee) approval. For programs housed outside the college structure, decisions regarding deferred suspension require approval of the academic unit.

10. Students placed on deferred suspension will have one term to return to good academic standing and will be required to complete an academic success plan with their home program.

11. Academic suspension refers to the academic action taken when a student is not permitted to enroll in courses at RIT for a minimum of one term. A student on academic suspension will be excluded from classes, university housing, and all other university activities during the period of academic suspension. Students on academic suspension may attend university events that are open to the general public and may participate only as a member of the general audience.

12. Students on academic suspension may be required to satisfy specific academic requirements imposed by the home program in order to be considered for readmission to their program.

13. Students on academic suspension may be admitted to another program if approved by the dean (or designee) of the college in which enrollment is requested. Such students will be placed on deferred suspension and required to complete an academic success plan with the new program. For programs housed outside the college structure, the approval of the academic program in which the enrollment is requested is required.

14. Students must apply through undergraduate admissions for re-admission at the end of their academic suspension. Such re-admission must be approved by the dean (or their designee) of the college for which they are requesting enrollment (this may be the original college or another) in consultation with the academic program. For programs housed outside the college structure, the re-admission must be approved by the director (or designee) of the academic unit for which they are requesting enrollment.

15. Readmitted students will be required to complete an academic success plan and will have up to two terms to return to good academic standing. After two terms, students who do not maintain both cumulative and term GPA of 2.0 or above will be placed on academic suspension.

Health policies

New York state and RIT immunization requirements

New York State public health law requires that all students enrolled for more than 6 credit hours in a term and born after January 1, 1957, must provide proof of immunization against measles, mumps and rubella and to sign a meningitis awareness form. The law applies to all full time and part time students including RIT employees. Immunization requirements include:

- Two MMR vaccinations at least one month apart and after the first birthday.
- A Meningitis Awareness Form must be signed by all students regardless of age.
- RIT requires students age 21 and under to be immunized against meningitis.
- Failure to comply with the New York State immunization law may lead to exclusion from classes and the RIT campus, and a $200 fine.

Covid vaccine requirement: All RIT students are required to be fully vaccinated. Individuals are considered fully vaccinated 1) two weeks after their second dose in a 2-dose series (such as the Pfizer or Moderna vaccines); or 2) two weeks after a single-dose vaccine (such as Johnson & Johnson's Janssen vaccine). For more information on RIT's Covid vaccination policy, please visit rit.edu/ready/rit-safety-plan.

Note: An email notification is sent to students' RIT email account with directions to complete the necessary health information through the Student Health Center portal. Please note that the immunization form is to be completed by the student online and then downloaded and taken to the student's health provider or school official for verification. The form must then be forwarded to the Student Health Center for approval (fax: 585-475-7530).

Health/Medical records

Medical records are confidential and separate from educational records. Information is not released without the written consent of the student. Exceptions to this rule are made only when required by the public health laws of New York State, a court-ordered subpoena or in a life-threatening situation.

Student Conduct Policies and Procedures

Expectations for community behavior

- RIT is a learning community where time, energy, and resources are directed toward learning and personal development.
- Members of the community live and work together to foster their own learning as well as the learning of others, both in and outside the classroom.
- Within the community, members hold themselves and each other to high standards of personal integrity and responsibility.
- Individual members continually strive to exceed their personal best in academic performance and the development of interpersonal and professional skills and attributes.
- As a member of the community, each person continually conducts himself/herself in a manner that reflects thoughtful, civil, sober, and considerate behavior.
- As a member of the community, each person respects the dignity of all people and acts to protect and safeguard the well-being and property of others.
- As a member of the community, each individual contributes to the continued advancement and support of the community, personally challenging behavior that is contrary to the welfare of others.
- Members of the community create a campus culture that values diversity and discourages bigotry while striving to learn from individual differences.

RIT honor code

Integrity and strong moral character are valued and expected within and outside of the RIT community. As members of the RIT campus community, including students, trustees, faculty, staff, and administrators, we will:

- Demonstrate civility, respect, decency and sensitivity towards our fellow members of the RIT community, and recognize that all individuals at this university are part of the larger RIT family, and as such are entitled to that support and mutual respect which they deserve.
- Conduct ourselves with the highest standards of moral and ethical behavior. Such behavior includes taking responsibility for our own personal choices, decisions and academic and professional work.
- Affirm through the daily demonstration of these ideals that RIT is a university devoted to the pursuit of knowledge and a free exchange of ideas in an open and respectful climate.

Consumer Information

www.rit.edu/fa/compliance/student-right-know

In compliance with the federal Student-Right-to-Know and Campus Security Act, and regulations of the U.S. Department of Education, RIT provides the following information to current and prospective students:

Outcomes Rate

Each year RIT gathers information about the career plans of its graduates in accordance with national standards established for the National Association of Colleges and Employers (NACE). These outcome summaries are provided by the university overall at both the undergraduate and graduate levels and reflect the career activities of graduates within six months of degree certification. Outcomes rates describe the percentage of graduates who have entered the workforce, enrolled for further full-time study, or are pursuing alternative plans. Alternative plans include military service, volunteer service, and those not seeking employment at this time.
The outcomes rate for the class of 2022 was 94.7% based on a 71.8% knowledge rate (the percent of graduates that RIT had verifiable information on.).

Student Persistence and Graduation

Of the cohort of full-time degree-seeking undergraduate students who first enrolled at RIT in fall 2016, 74.0% had earned their bachelor's degrees as of August 2022. While these beginning and end dates meet the act's requirements for determining a graduation rate (150 percent of the normal length of full-time study [4 years]), it is important to recognize that nearly two-thirds of entering first-year students enroll in programs with mandatory cooperative education requirements. These requirements range from three to 14 months depending upon the program, thus extending the reported program length to five years. The one-year persistence rate for the class that entered in 2021 was 85.4 percent.

Public Safety

The Public Safety Department is open 24-hours-a-day and is located in Grace Watson Hall. The department encourages the RIT community to take responsibility for their safety by staying informed of these services and reporting suspicious activity. Although each individual is ultimately responsible for their own personal safety, learning and practicing basic safety precautions can enhance one's well being. RIT's Public Safety Report is available at: https://www.rit.edu/publicsafety/sites/rit.edu.publicsafety/files/documents/2022AnnualSecurityReport.pdf.

The department provides the following services:

Blue light call boxes: Identified by a blue light and located across campus, these call boxes are a direct line to Public Safety 24-hours-a-day. The location of the call is automatically recorded at the Public Safety Communications Center, making it possible for hard-of-hearing individuals to also use the call boxes. The call boxes are used to request a security escort, assist motorists, report suspicious individuals/activity, or request access to locked buildings or rooms.

Mobile escort service: Available to anyone, anytime, seven-days-a-week.

Lost and found: All items lost and found are stored by the Public Safety Department. To report an item lost, visit rit.edu/publicsafety/safety/lostitems.html (requires RIT computer account).

Emergency notification: If a family member needs to make an emergency notification to a student, he or she should contact Public Safety at (585) 475-2853 or TEXT at (585) 205-8333. Public safety will locate the student and relay the message.

Awareness programs: Public safety hosts a variety of prevention awareness programs and services on various topics including crime prevention, personal safety, and alcohol awareness. A monthly newsletter, RIT Ready, is distributed to students, faculty, and staff to bolster emergency preparedness on campus.

Annual Safety and Security Report: Public safety's security report is available online: https://www.rit.edu/publicsafety/sites/rit.edu.publicsafety/files/documents/2022AnnualSecurityReport.pdf

Confidential tip line: This service obtains information that is unattainable through conventional methods and to alert public safety to endangering behavior that might go otherwise unreported. An online form is available at rit.edu/publicsafety/forms/tipline (requires RIT computer account).

Crime statistics: The Advisory Committee on Public Safety will provide, upon request, all campus crime statistics as reported to the Department of Education. RIT crime statistics can be found online (ope.ed.gov/security) or by contacting the Public Safety Department. A hard copy of reported crime statistics required to be ascertained under Title 20 of the U. S. Code Section 1092(f) will be mailed to you within 10 days of the request.

Sexual assault information and CARES: Confidential counseling services are available to anyone in need by calling (585) 546-2777 (voice/TTY). RIT's Campus Advocacy Response and Support (CARES) is located on campus and provides confidential and crisis intervention and support services for relationship concerns. Learn more at rit.edu/counseling/cares or contact (585) 295-3533 at any time for assistance.

Emergency Preparedness: RIT regularly communicates, prepares, and practices emergency management with public safety personnel and campus managers from various departments. If necessary, we will provide updated information through broadcast email, mass notification system (RIT ALERT), voicemail, ALERTUS beacons, and the university's website at rit.edu.

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