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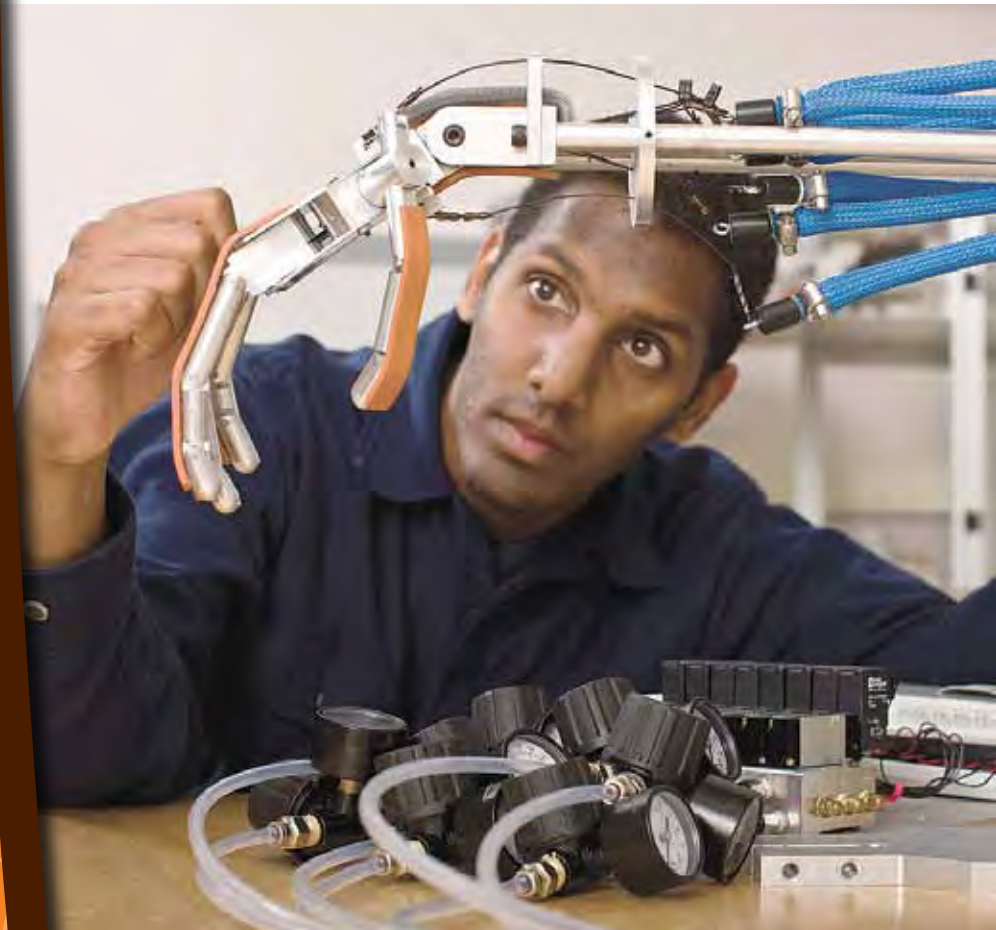## UNDERGRADUATE BULLETIN

2011-2012

About this Bulletin

The academic programs, course curricula, policies, and standards described in this *Undergraduate Bulletin* are in effect for students admitted to RIT during the 2011–2012 academic year. The purpose of this bulletin is to provide students with a comprehensive source of information to use in planning their undergraduate education.

Descriptions of all undergraduate courses offered at Rochester Institute of Technology are available at www.rit.edu/ugrad_courses. Students may also request an *Undergraduate Course Descriptions* book from their college's academic advising office or the Undergraduate Admissions Office.

Graduate degree programs and other post-baccalaureate offerings are described in the *Graduate Bulletin*, available through the Office of Graduate Enrollment Services.

The *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; modification of tuition, fees, dormitory, meal plan, or other charges; and unforeseen changes in other aspects of RIT sometimes occur after the bulletin has been printed, but before the changes can be incorporated in a later edition. Because of this, Rochester Institute of Technology does not assume a contractual obligation with its students for the contents of this *Undergraduate Bulletin*.

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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 10 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, 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 foreign 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 13,800 full-time undergraduate students, 2,500 part-time undergraduate students, and 2,600 graduate students attend RIT. More than 106,000 alumni can be found around the globe.

Almost one-third of our undergraduates are transfer students from two-year colleges or other four-year institutions, and adult students make up a significant portion of the total enrollment. Our full-time undergraduate student body includes more than 1,200 deaf and hard-of-hearing students who share the same residence halls and classes on campus.

RIT's cooperative education program is the fourth-oldest and one of the largest in the world. We place more than 3,600 students in co-op work positions with approximately 2,000 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 345 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.

Quarter to semester conversion

Beginning in the fall of 2013, RIT will convert from three 10-week quarters to two 16-week semesters. Students beginning academic programs in the fall of 2011 will begin in the current quarter system and complete their degrees in the new semester-based calendar.

William Destler, president of RIT, has made the following commitment to students: "Principle number one in the transition will be to protect all students from any harm during the change from quarters to semesters. Specifically, we must ensure that no student suffers any loss of progress toward a degree during the transition; that no student's graduation will be delayed as we make the change from quarters to semesters; and that no student will see any increase in tuition or fees related to the transition. As part of the transition process, every student on campus will be personally advised to ensure that this principle is upheld in every case."

For more information on the quarter-to-semester conversion, please visit www.rit.edu/conversion.

RIT's colleges and degree-granting entities

The College of **Applied Science and Technology** offers bachelor of science programs in civil engineering technology; electrical, computer, and telecommunications engineering technology; manufac-

turing and mechanical engineering technology; electrical mechanical engineering technology; international hospitality and service management; packaging science; and environmental sustainability, health and safety. The college also offers a wide variety of degrees, diplomas, and certificates to full- and part-time students. Programs and courses are offered during the day and evening, and by online learning. Many of the college's programs are also offered as master's degrees. Certificates are offered in several areas and are especially appropriate for part-time adult students looking for convenience, quality, and practicality. All of the college's engineering technology programs have received accreditation by the Accreditation Board for Engineering Technology (ABET).

The E. Philip Saunders College of **Business** offers seven majors leading to the bachelor of science degree: accounting, finance, international business, management, management information systems, marketing, and new media marketing. With an emphasis on innovation, the commercialization of technology, and a global focus, these programs combine specialized courses in a major, along with courses in the liberal arts and sciences, with cooperative education experience. The college is consistently ranked in *U.S. News & World Report's* Top Undergraduate Business Programs and also is accredited by the Association to Advance Collegiate Schools of Business (AACSB International). The Saunders College also awards MBA and MS degrees. An accelerated BS/MBA option offers outstanding undergraduates the opportunity to complete both degrees in five years.

The B. Thomas Golisano College of **Computing and Information Sciences** is one of the largest and most comprehensive colleges in the nation devoted to the study of computing and information sciences. Eight bachelor of science degree programs are available in applied networking and system administration, computer science, game design and development, information technology, information security and forensics, medical informatics, new media interactive development, and software engineering. In 1972, RIT was among the first universities in the United States to offer a full undergraduate degree program in computer science. Academic innovation has continued in recent years, as RIT developed the nation's first undergraduate degree programs in information technology and software engineering. The college awards BS and MS degrees in a variety of computer disciplines as well as a doctoral degree in computing and information sciences. All of the college's BS degree programs require cooperative education.

The Kate Gleason College of **Engineering** offers BS degrees in biomedical, chemical, computer, electrical, industrial, mechanical, and microelectronic engineering. Specialized options within these programs also are offered for students interested in areas such as aerospace, automotive, energy and the environment, ergonomics, lean six-sigma, manufacturing, robotics, software engineering, and supply-chain management. For those who need time to decide on a particular major, the college also offers an engineering exploration program in the first year. Starting after the second year, students in all engineering programs are required to participate in the cooperative education program. The college also offers a number of accelerated dual degree options (combined BS/MS or BS/MEng degrees). Recognized as one of the premier engineering colleges dedicated to undergraduate teaching and cooperative education, the college also offers the nation's only doctoral program in microsystems engineering.

The College of **Health Sciences and Technology** is RIT's newest college. It was created to respond to the growing need for well-educated professionals in the health care field. The college provides a focused, interdisciplinary, and systems approach to innovative health care education with undergraduate degrees offered in the following programs: biomedical sciences, diagnostic medical sonography (ultrasound), nutrition management, and physician assistant.

The College of **Imaging Arts and Sciences** includes the schools of American Crafts, Art, Design, Film and Animation, Photographic Arts and Sciences, and Print Media. Specialized labs and darkrooms, studios, computer facilities, photo and graphic design archives, and a broad range of high-tech equipment are provided for students. RIT is recognized as one of the nation's top-ranked universities for design, print media, and the study of photography.

The College of **Liberal Arts** offers bachelor of science degree programs in advertising and public relations, criminal justice, economics, international studies, journalism, museum studies, professional and technical communication, philosophy, political science, psychology, public policy, and urban and community studies. A one-year undeclared option is offered for students who wish to pursue a liberal arts degree but are undecided about which program to pursue. The college also provides a comprehensive program of liberal arts education that is the foundation for all RIT students' educational experience. In addition to core requirements, students select a concentration or minor from a wide variety of disciplines in the humanities, social sciences, or behavioral sciences.

The Center for **Multidisciplinary Studies** provides an opportunity for students to customize their own associate, bachelor's, and master's degree programs to relate directly to their personal and professional objectives and aspirations. The center also offers a variety of certificate programs for students interested in gaining expertise in a specific area of study.

The **National Technical Institute for the Deaf** provides technical and professional programs for approximately 775 deaf and hard-of-hearing students enrolled in associate degree programs. The college also provides extensive educational access services for approximately 525 deaf students who are pursuing bachelor's or master's degrees or taking courses in RIT's other colleges. Within NTID, students may pursue either career-focused associate degree programs leading directly to employment or associate degree programs designed to facilitate seamless transition to RIT's baccalaureate programs. Students choose from a variety of associate degree options/concentrations in accounting technology, administrative support technology, applied computer technology, applied liberal arts, applied mechanical technology, arts and imaging studies, business, business technology, computer-aided drafting technology, computer-integrated machining technology, hospitality and service management, and laboratory science technology. The college also enrolls hearing students in its ASL-English interpretation programs.

The College of **Science** emphasizes the practical aspects of science and mathematics along with applied research opportunities for undergraduate and graduate students. The college offers a variety of degree programs in the sciences; mathematics and statistics; imaging science; molecular bioscience and biotechnology; bioinformatics; and other unique programs. A general science exploration option is popular with students who want more time to decide on their major. Many of the college's bachelor of science degree programs offer an optional cooperative education program. The college awards bachelor of science and master of science degrees. Doctoral degrees are awarded in astrophysical sciences and technology, color science, and imaging science.

Undergraduate Programs of Study

Undergraduate Programs of Study		Certificate	Diploma	AOS	AS	AAS	BFA	BS	Page #
Art, Design, and Crafts									
3D Digital Graphics	Imaging Arts and Sciences						1009		
Ceramics and Ceramic Sculpture	Imaging Arts and Sciences					5610	1009		
Fine and Applied Arts†§	Imaging Arts and Sciences			5012					
Fine Arts Studio	Imaging Arts and Sciences					5610	1002		
Glass*	Imaging Arts and Sciences					5012	1009		
Graphic Design	Imaging Arts and Sciences					5012	1009		
Illustration	Imaging Arts and Sciences					5610	1002		
Industrial Design	Imaging Arts and Sciences						1009		
Interior Design	Imaging Arts and Sciences						1009		
Medical Illustration	Imaging Arts and Sciences						1299		
Metalcrafts and Jewelry*	Imaging Arts and Sciences					5012	1009		
New Media–Design and Imaging*	Imaging Arts and Sciences						0605		
Woodworking and Furniture Design	Imaging Arts and Sciences			5317		5012	1009		
Business and Management									
Accounting*	Business							0502	
Accounting Technology	National Technical Institute for the Deaf					5002			
Administrative Support Technology	National Technical Institute for the Deaf					5005			
Business	National Technical Institute for the Deaf				5001				
Business Administration†	Applied Science and Technology					5001			
Business Technology	National Technical Institute for the Deaf				5004				
Disaster and Emergency Management‡	Applied Science and Technology	5508							
Finance	Business							0504	
General Management†	Applied Science and Technology					5004			
Health Systems Administration†‡	Applied Science and Technology	5299							
Hospitality and Service Management	National Technical Institute for the Deaf				5011				
Human Resource Administration†	Applied Science and Technology					5004			
Human Resource Development†*	Applied Science and Technology	5004							
International Business*	Business							0513	
International Hospitality and Service Management*	Applied Science and Technology							0510.10	
Management† *	Business							0506	
Management Development†	Applied Science and Technology	5004	5004						
Marketing*	Business							0509	
New Media Marketing	Business							0509	
Nutrition Management	Health Sciences and Technology					5404		1306	

Program	College							
Organizational Change and Leadership†	Applied Science and Technology	5004						
Small Business Management†	Applied Science and Technology	5004						
Communications, Film, and Photography								
Advertising Photography*	Imaging Arts and Sciences						1011	
Arts and Imaging Studies	National Technical Institute for the Deaf			5012		5012		
ASL-English Interpretation	National Technical Institute for the Deaf					5506		1199
Biomedical Photographic Communications	Imaging Arts and Sciences					5299		1217
Film and Animation*	Imaging Arts and Sciences						1010	
Fine Art Photography*	Imaging Arts and Sciences						1011	
Graphic Communication‡	Applied Science and Technology	5008						
Imaging and Photographic Technology	Imaging Arts and Sciences					5007		1011
Media Arts and Technology*	Imaging Arts and Sciences							0605
Motion Picture Science*	Imaging Arts and Sciences							1010
Performing Arts	National Technical Institute for the Deaf	5610						
Photojournalism*	Imaging Arts and Sciences						1011	
Professional and Technical Communication	Liberal Arts							0601
Professional Writing‡	Applied Science and Technology	5008						
Technical Communication: Basic†‡	Applied Science and Technology	5008						
Technical Communication: Advanced†‡	Applied Science and Technology	5008						
Visual Media	Imaging Arts and Sciences						1009	
Computing and Information Sciences								
Applied Computer Technology	National Technical Institute for the Deaf		5101	5101	0799	5101		
Applied Networking and System Administration†	Computing and Information Sciences							0702
Computer Science*†	Computing and Information Sciences							0701
Game Design and Development	Computing and Information Sciences							0799
Information Security and Forensics	Computing and Information Sciences							0799
Information Technology†	Computing and Information Sciences							0699
Management Information Systems	Business							0599
Medical Informatics*	Computing and Information Sciences							1217
New Media Interactive Development	Computing and Information Sciences							0699
Software Engineering*	Computing and Information Sciences							0999
Engineering and Engineering Technology								
Applied Mechanical Technology	National Technical Institute for the Deaf					5315		
Automation Technologies§	National Technical Institute for the Deaf			5399§		5399§		
Biomedical Engineering	Engineering							0905
Chemical Engineering	Engineering							0906
Chemical Engineering/Science, Technology and Public Policy*	Engineering / Liberal Arts							0906
Civil Engineering Technology	Applied Science and Technology							0925
Computer-Aided Drafting Technology	National Technical Institute for the Deaf			5303		5303		
Computer Engineering*	Engineering							0999
Computer Engineering Technology†	Applied Science and Technology							0925
Computer-Integrated Machining Technology	National Technical Institute for the Deaf			5312				
Electrical Engineering*	Engineering							0909
Electrical Engineering Technology†	Applied Science and Technology							0925
Electrical/Mechanical Engineering Technology*†‡	Applied Science and Technology							0925
Electrical Technology†	Applied Science and Technology					5310		
Engineering Science†	Engineering				5609			
Industrial Engineering*	Engineering							0913
Industrial Engineering/Sustainable Engineering*	Engineering							0913
Manufacturing Engineering Technology*†	Applied Science and Technology							0925
Mechanical Engineering*	Engineering							0910
Mechanical Engineering Technology†	Applied Science and Technology							0925
Mechanical Engineering/Science, Technology and Public Policy*	Engineering / Liberal Arts							0910

Program	College						
Mechanical Technology†	Applied Science and Technology	5301				5315	
Microelectronic Engineering*	Engineering						0999
Packaging Science	Applied Science and Technology						4999
Quality Management	Applied Science and Technology	5004					
Safety Technology‡*	Applied Science and Technology	5312					0420
Software Engineering*	Computing and Information Sciences						0999
Structural Design‡	Applied Science and Technology	5399					
Telecommunications Engineering Technology†§	Applied Science and Technology						0925

Environmental Studies

Program	College						
Environmental Science*	Science						0420
Environmental Sustainability, Health and Safety*†	Applied Science and Technology						0420

Mathematics, Science, and Medical Sciences

Program	College						
Applied Mathematics*	Science				5617*		1703
Applied Statistics*	Science						1702
Biochemistry*	Science						0414
Bioinformatics*	Science						0499
Biology	Science				5604*		0401
Biomedical Sciences	Health Sciences and Technology						0499
Chemistry*†	Science				5619*		1905
Computational Mathematics*	Science						1703
Diagnostic Medical Sonography	Health Sciences and Technology	5299					1299
Echocardiography	Health Sciences and Technology	5217					
Exercise Science	Health Sciences and Technology	5299.3					
Imaging Science	Science						1999.20
Laboratory Science Technology	National Technical Institute for the Deaf			5407		5407	
Molecular Bioscience and Biotechnology	Science						0499
Physician Assistant	Health Sciences and Technology						1299.10
Physics*	Science				5619*		1902
Polymer Chemistry§	Science						1907

Multidisciplinary Studies (Individualized Programs)

Program	College						
Applied Arts and Science†‡	Applied Science and Technology		5699			5699	4999

Social Sciences

Program	College						
Advertising and Public Relations	Liberal Arts						0604
Applied Liberal Arts	National Technical Institute for the Deaf				5699		
Criminal Justice	Liberal Arts						2105
Deaf Cultural Studies/American Sign Language	National Technical Institute for the Deaf	5506					
Economics	Liberal Arts						2204
International Studies	Liberal Arts						2210
Journalism	Liberal Arts						0604
Museum Studies	Liberal Arts						1099
Philosophy	Liberal Arts						1509
Political Science	Liberal Arts						2207
Psychology	Liberal Arts						2001
Public Policy*	Liberal Arts						2102
Urban and Community Studies	Liberal Arts						2214.00

* Accelerated dual degree (BS/MS) option available.
† Evening option available.
‡ Online option available.
§ This program has been approved for discontinuance. No new students will be admitted in 2011-2012.

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 adviser, 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 quarters 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 program cumulative grade-point average of at least 2.0. The physician assistant program requires a program cumulative grade-point average of 2.8 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

At least 45 of the credit hours used toward a degree program must be earned by successfully completing RIT courses. In addition, at least 30 of the final 45 hours of any program must be earned through RIT courses. 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 180 cumulative earned hours (90 hours for associate degrees). Cumulative earned hours include RIT courses, transfer credit, credit by exam/experience, CLEP, AP, and IB credits.

D. Demonstration of writing skills

Students must demonstrate, to the satisfaction of the dean of their college, the writing skills necessary for successful entry into their chosen careers. Each academic department determines the criteria and standards for evaluating abilities.

E. Fulfillment of all financial obligations to RIT

The Liberal Arts General Education Curriculum

Students in all baccalaureate degree programs are required to complete at least 90 credit hours of general education. This includes a minimum of 36 quarter credit hours in the humanities and social sciences taken in the College of Liberal Arts. If a student elects to complete a minor in the College of Liberal Arts, the total number of required humanities or social science credits will be 44. Students enrolled in bachelor of science programs also must complete at least 20 quarter credit hours of general education in the College of Science.

The College of Liberal Arts general education curriculum is divided into an introductory core, an Arts of Expression course, and advanced courses in a liberal arts concentration or liberal arts minor. The requirements for baccalaureate degree programs are summarized below.

I. The introductory core totals 20 credit hours and is composed of the following 200- to 300-level courses:

A. Writing (0502-227) (4 credit hours)

B. Two humanities courses (8 credit hours) taken from two different disciplines: fine arts; history; literature; philosophy; science, technology, and values; or introduction to environmental studies

C. Two social science courses (8 credit hours) taken from two different disciplines: anthropology, economics, political science, psychology, and sociology

II. Arts of Expression course (4 credit hours)

III. Advanced course work in a liberal arts concentration or minor (minimum 12 credit hours required in 400- to 500-level courses)

Students enrolled in associate degree programs will generally complete only a portion of the liberal arts requirements listed above. Additional information is provided in the academic program descriptions in this bulletin and through academic advisers.

Liberal arts advising

Liberal arts requirements vary within the individual degree programs. Therefore, it is important that students carefully plan their liberal arts program to meet the specific requirements of their degree program. Advising staff are available in the College of Liberal Arts' Office of Student Services to provide assistance in planning and selecting appropriate liberal arts courses. Through this office, the college provides academic worksheets for each degree program to help students maintain records of progress toward their degree.

The College of Liberal Arts faculty recommends that students who wish to pursue their liberal arts studies beyond the minimum general education requirement consider any of the following options:
- the additional courses needed to complete a liberal arts minor,
- the additional courses needed to complete a second liberal arts minor,
- the additional courses needed to complete a liberal arts double major,
- a 500-level seminar course,
- at least one multicultural or international/global studies course,
- additional courses that feature writing,
- courses that complement or add depth to professional studies,
- courses that respond to personal interests—even if immediate ties to professional studies are not apparent, or
- the study of a foreign language to facilitate study abroad or professional development.

The Mathematics and Science General Education Curriculum*

The mathematics and science general education curriculum requirement applies to all students pursuing the bachelor of science degree. Students in bachelor of fine arts programs need not complete this requirement.

The general education curriculum in mathematics and science is a component of all RIT bachelor of science degree programs and is completed through one of three options. These options offer a balance between mathematics and science. A minimum of 20 credits is required. Students should consult with their program chairperson or academic adviser for specific course requirements and approved sequences.

Plan A: Balanced
Mathematics—One three-course sequence
Science—One three-course sequence and associated laboratories

Plan B: Emphasis on science
Mathematics—One two-course sequence
Science—One two-course sequence and associated laboratories, plus two additional science electives

Plan C: Emphasis on mathematics
Mathematics—One two-course sequence, plus two additional mathematics electives
Science—One two-course sequence and associated laboratories

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 adviser 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.

Colleges of RIT

Students will choose one college as their home, where they will concentrate on an in-depth degree program (major), but their course work could draw from the strengths and interactions of all 10 of RIT's colleges and degree-granting entities.

RIT's colleges and degree-granting entities

College of Applied Science and Technology

E. Philip Saunders College of Business

B. Thomas Golisano College of Computing and Information Sciences

Kate Gleason College of Engineering

College of Health Sciences and Technology

College of Imaging Arts and Sciences

College of Liberal Arts

Center for Multidisciplinary Studies

National Technical Institute for the Deaf

College of Science

University Studies, Undeclared options

Some of our accepted students have interests that span two or more of our colleges. To help these students choose the academic program that best meets their career interests and goals, RIT offers the **University Studies** program. The university's broadest and most flexible option, the program allows students up to a year to explore more than 90 bachelor's degree programs while completing courses in general education, math, and science. University Studies students work individually with experienced advisers who make suggestions on course work and programs of study. Through advising and individual interaction with faculty and department chairs, students narrow their focus on a degree program that matches their career interests and goals.

If a student's primary interests fall within one college, but they are unsure which major best fits their career goals, eight colleges offer **Undeclared options**. These college-based options help students discover more about their specific interests within the majors offered by the college.

College of Applied Science and Technology

H. Fred Walker, Dean

www.rit.edu/cast/

Programs of study

Bachelor of Science degrees in:

Certificates in:

The College of Applied Science and Technology provides programs that stress technology in a variety of environments, enhance customer satisfaction in the service sector, 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. 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).

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to 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.

Faculty

Faculty members in the college have considerable experience in their respective industrial fields, teaching experience from two- and four-year colleges, and have completed graduate programs in their various specialties. While teaching is a primary concern, they are also researchers who maintain current knowledge in their fields. They are committed to student growth and development.

Facilities and resources

- The college's newest building supports RIT's commitment to environmentally sustainable design. It is LEED (Leadership in Energy and Environmental Design) certified and houses the William G. McGowan Student Commons; the American Packaging Corporation Center for Packaging Innovation; the William G. McGowan Center for Telecommunications, Innovation, and Collaborative Research; the REDCOM Telecommunications Systems Laboratory; the department of civil engineering technology/environmental management and safety; the department of electrical, computer,

and telecommunications engineering technology; advising and faculty offices; and laboratories.

- An adjacent building houses the department of manufacturing and mechanical engineering technology/packaging science; administrative, advising, and faculty offices; a student project area; and mechanical systems, materials, and product innovation laboratories.
- Additional laboratories are located in the Center for Integrated Manufacturing Studies, which features state-of-the-art labs in CAD/CAM systems, electronics manufacturing, instrumentation, and packaging testing.
- Henry's, the college's student-run kitchen and restaurant, which is part of the School of International Hospitality and Service Innovation, showcases some of the most sophisticated service equipment and computing resources in the country.
- Newly remodeled food product development laboratories allow students to create menu items for classes that pertain to the growing food service industry.
- Computing information laboratories provide data that enable students to assess the supply and demand for food commodities throughout the world.

Cooperative education

All full-time engineering technology programs require students to complete five quarters of cooperative education before they can be awarded a bachelor of science degree. All part-time programs also require either cooperative education or its equivalent beyond the level of an associate degree. Many students who work full time and are enrolled part time in an engineering technology program may be able to apply a portion of their full-time employment toward cooperative education experience. The student's professional responsibilities and how they pertain to the degree program in which the student is enrolled must be reviewed to determine if co-op credit may be given.

Some engineering technology programs require an official entry into co-op, with cooperative education experience listed on the student's transcript. Part-time students in the electrical, computer, and telecommunications engineering technology programs have the same cooperative education requirements as full-time students. As part of the graduation requirement for a BS in mechanical engineering technology, electrical/mechanical engineering technology, and manufacturing engineering technology, the department requires that the work experience of all part-time and distance students must total at least 48 weeks of documented full-time work experience relevant to their major.

Co-op provides an opportunity for students to apply techniques, skills, and the latest developments in their fields in a professional environment. Students learn the day-to-day operations of an engineering technology professional while they gain valuable experience that hones their skills and makes them more marketable upon graduation.

Co-op also can provide an income that may help defray a portion of the student's educational expenses. The Office of Cooperative Education and Career Services assists students in obtaining co-op positions that relate to their career goals.

Accreditation

The following degree programs are accredited by the Technology Accreditation Commission (TAC) of ABET (http://www.abet.org): civil engineering technology, computer engineering technology, electrical engineering technology, electrical/mechanical engineering technology, manufacturing engineering technology, mechanical engineering technology, and telecommunications engineering technology.

Advising

The college provides advising services to support students throughout their academic careers. A faculty adviser, co-op adviser, professional adviser, and staff in the departmental offices all participate in the student's academic experience. A faculty adviser is uniquely prepared to offer career counseling in each student's major field of study. The Office of Cooperative Education and Career Services assigns each co-op student an adviser who assists in the placement process. In the departmental offices, all students are assured of administrative support to effectively deal with registration, records, and scheduling. Professional advisers assist in academic planning and problem solving. With a prearranged appointment, part-time students will find advisers available during the evening. Each of these advisers will also help identify appropriate support services for specific student needs.

Academic enrichment

The Honors Program: Students who demonstrate a high level of achievement at the high school level may be invited to join the Honors program. These students will participate in Honors course work throughout their program of study and experiential learning activities under the guidance of a faculty mentor. Honors students will be selected during the admissions process.

Minors: Students may choose from more than 95 minors to enhance their academic program or further develop a personal area of interest. For a detailed list of minors, including courses, please refer to the Minors section of this bulletin.

Study abroad: RIT encourages all students to consider a study abroad program to enhance their understanding of globalization and other cultures. Students may study full time at a variety of host schools and are able to select both major and liberal arts classes. The Study Abroad Office has information about foreign study options and opportunities.

Professional student organizations: The college maintains memberships in the following professional organizations: American Society of Civil Engineers; Women in Technology; Students Innovating Technology; Institute of Packaging Professionals; Society for Manufacturing Engineers; BAJA SAE Team; American Society of Heating, Refrigerating and Air-Conditioning Engineers; and the Student Environmental Action League.

Special opportunities

Accelerated dual degree programs: Some programs offer accelerated, five-year dual BS/MS degree options. These degrees offer students the opportunity to earn a bachelor's degree and a master's degree in less time than pursuing each degree individually. Please refer to individual programs for information on BS/MS options.

Graduate study: The College of Applied Science and Technology offers graduate programs and advanced certificates in a number of areas related to technology, the environment, health care, service management and hospitality, and manufacturing. For a complete list of programs and their curricula please refer to the *Graduate Bulletin*.

Part-time/Evening/Online options: Many of the college's programs may be completed on a part-time, evening, or online basis. Please refer to the Office of Part-time and Graduate Enrollment or the college's website for more information.

School of Engineering Technology

RIT is a leader in the development of bachelor's and master's programs in engineering technology that are designed to meet the growing needs of business and industry for engineering technologists.

Degree programs

There are seven engineering technology programs:
- civil engineering technology
- computer engineering technology
- electrical engineering technology
- electrical/mechanical engineering technology
- manufacturing engineering technology
- mechanical engineering technology
- telecommunications engineering technology

Many students choose to transfer from similar engineering technology fields to continue study in a particular engineering technology specialization, typically entering as upper-division students. Each program consists of a balance of professional studies, the liberal arts, mathematics, and cooperative education. With the selection of technical electives, students can tailor their program to enhance previous knowledge and work experience.

Upper division: The engineering technology programs are flexible and can easily accommodate students who currently work in full-time positions and wish to pursue a degree on a part-time basis. Part-time study in all engineering technology upper-division programs is available during the day. All programs offer part-time study in the evenings, except civil engineering technology. Many courses are available online.

The requirements for part-time study and for graduation are consistent with those for the electrical, computer, and telecommunications engineering technology full-time day programs requiring co-op experience. The part-time mechanical, electrical/mechanical, and manufacturing engineering technology programs do not require cooperative education.

Lower division: Engineering technology offers the following lower-division evening programs: electrical technology and mechanical technology.

Certificate programs are available during the evening and through online learning. For more information, please request a *Part-time Undergraduate Studies Guide*, an *Online Studies Guide*, or visit the Part-time and Graduate Enrollment Services website at www.rit.edu/emcs/ptgrad/.

Engineering Technology, Undeclared

http://www.rit.edu/cast/mmetps/

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Program overview

Students interested in the fields of engineering technology or packaging science but undecided about selecting a specific program of study should consider the undeclared engineering technology option. Students spend up to one year exploring the various engineering technology programs while earning course credit that can be applied to any of the programs.

Curriculum

During the first quarter, students take basic technical skills courses in both the electrical and mechanical disciplines. They also participate in Engineering Technology Seminar (0606-101), which explores the unique characteristics of each engineering technology discipline. After the first quarter, students are expected to select a specific program of study or focus on a discipline area, such as electrical (computer, electrical, telecommunications), mechanical (manufacturing, mechanical, packaging), or civil (civil, environmental management, safety). By the spring quarter, students are required to select a program of study. In their first two years, students who chose the undeclared engineering technology program may take some courses at different times than the students who entered their first year in a declared program. In most cases, however, students who start in the undeclared option are able to begin their junior year on track with other students in their same program of study.

Undeclared engineering technology, freshman course sequence

COURSE		QTR. CR. HRS.
Fall Quarter		
	Liberal Arts*	4
0617-262	Solid Modeling and Design	4
0618-213	ExCiTe Introduction to ECT ET	4
1016-230	Precalculusor Math Sequence	4
0606-101	Engineering Technology Seminar	2
1720-051	First-Year Enrichment	1
Winter Quarter		
Choose from one of the following programs: Electrical Engineering Technology, Mechanical Engineering Technology, Electrical/ Mechanical Engineering Technology, Computer Engineering Technology, Telecommunications Engineering Technology, Civil Engineering Technology, Environmental Management, Safety Technology, Packaging Science		
	Liberal Arts*	4
1720-052	First-Year Enrichment	1
1016-231	*Choose from one of the following:* Calculus for Engineering Technology or Math Sequence	4
	Two courses from selected option (with adviser approval)	8
Spring Quarter		
	Liberal Arts*	4
1016-232	Calculus for Engineering Technology II or Math sequence	4
	Two courses from selected option (with adviser approval)	8
Total Quarter Credit Hours		**52**

* Please see Liberal Arts General Education Requirements for more information.

Civil Engineering Technology, BS

http://www.rit.edu/cast/cetems/

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Program overview

Using the language of codes, working drawings, and specifications, students in the civil engineering technology program will learn

how to translate the innovative concepts of the engineer into functioning systems and structures. The program prepares students for employment in the fields of civil engineering technology, construction management, or any of the many closely related fields. In addition, the program teaches the skills necessary for graduates to pursue additional education, certification, or professional licensure. The program also encourages students to grow in responsibility and leadership through course work and extracurricular activities designed to broaden their involvement in organizations within and outside their profession. These objectives are achieved through a broad-based curriculum that offers students a choice of five elective paths that meet specific career interests.

Accreditation
The civil engineering technology program is accredited by the Technology Accreditation Commission of ABET, http://www.abet.org, and is operated as a cooperative education program.

Graduates
Consulting engineers; construction companies and industries; and federal, state, and local government agencies employ engineering technology graduates both nationally and internationally. Their initial job titles range from assistant project manager, structural designer, or junior engineer to construction inspector and environmental engineer. Many of our graduates continue on to pursue advanced degrees, a large number have gained registration in several states as professional engineers, and many manage their own consulting firms.

Civil engineering technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year‡		
0608-051	Introduction to Civil Engineering Technology	1
1016-230	Precalculus	4
0608-211	Engineering Graphics with CAD	4
0608-330	Materials of Construction	4
1016-231	Calculus for Engineering Technology I	4
1017-211, 212, 271, 272	College Physics I, II, Lab	8
0608-225	Problem Solving and Communication with Computers	2
0610-302	Introduction to Statics	4
0608-220	Civil Engineering Graphics	4
	Liberal Arts*	16
	Wellness Education†	1
1105-051, 052	First-Year Enrichment	2
Second Year		
1017-213, 273	College Physics III, Lab	4
0608-320	Plane Surveying	4
0535-403	Effective Technical Communication	4
0610-303	Strength of Materials	4
0608-360	Elementary Soil Mechanics	4
0608-422	Elements of Building Construction	4
1016-232	Calculus for Engineering Technology II	4
0608-340	Route Surveying	4
0608-380	Elementary Structures	4
1016-304	Differential Equations for Engineering Tech	4
	Liberal Arts*	8
	Wellness Education†	0
Third Year		

COURSE		QTR. CR. HRS.
0608-199	Introduction to Civil Engineering Technology, Transfer	1
0608-420, 421	Hydraulics, Lab (or Technical Elective)	4
0608-304	Structural Loads and Systems	2
0608-303	Land Development Computer Applications	2
	Math Elective	4
0608-305	Structural Computer Applications	2
0608-404	Applied Mechanics of Materials	4
	Technical Elective	2
1011-271	Fundamentals of Chemistry	3
1011-205	Chemistry I Lab	1
	Liberal Arts*	8
0606-099	Co-op Preparation	0
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
0608-432	Water and Wastewater Transport Systems	2
0608-490	Structural Analysis	4
1011-272, 276	Chemistry of Water and Wastewater, Lab	4
	Technical Electives	8
0608-438	Principles of Water and Wastewater Treatment	4
0608-497	Structural Design 0608-496 or	4
0608-527, 528	Soil Mechanics and Foundations, Lab	4
0608-546	Professional Principles and Practices	1
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
Fifth Year		
0608-530	Transportation Engineering	4
	Free Electives	12
1017-359	Technology Electronics	4
0617-436	Engineering Economics	4
0608-570	Principles of Dynamics in Civil Engineering Technology	4
	Liberal Arts*	4
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**206**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ The typical course sequence chart is for students who begin the program as freshmen. Transfer students will be given a program tailored to their particular needs.

Technical electives
It is anticipated that a student will take at least two electives from one of the sequences shown below. Other electives may be chosen from within that sequence, from another sequence, or from the other electives shown. With departmental approval, technical electives may be selected from existing courses in other RIT colleges. Also, independent study projects may be pursued for credit in cases where students demonstrate unusual ability and obtain sponsorship of a faculty adviser.

COURSES		QTR. CR. HRS.
Water Resources		
0608-482	Stormwater Management	4
0608-485	Hydraulic Structures	4
0608-480	Groundwater Hydraulics	4
Environmental Controls		
0608-510	Design of Water Treatment Facilities	2
0608-514	Land Use Planning	4
0608-511	Design of Wastewater Treatment Facilities	2
0608-525	Resource Recovery/Waste Management	4
Construction Management		

COURSES		QTR. CR. HRS.
0608-500	Labor Relations	2
0608-509	Cost Estimating	4
0608-560	Construction Project Management	4
0608-544	Contracts and Specifications	2
Structures		
0608-470	Timber Design	4
0608-496	Reinforced Concrete Design	4
0608-497	Structural Steel Design	4
Building and Heavy Construction		
0608-460	Construction Equipment	2
0608-505	Construction Safety	2
0608-535	Pavement Design	4
0608-444	Mechanical Equipment	2
Other Electives		
1016-319	Data Analysis	4
0610-440	Applied Thermodynamics	4
0630-370, 372	Environmental Geology, Lab	4

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Advisory Board

The Industrial Advisory Board is comprised of local and regional industry leaders from consulting, construction, and the municipal market. These advisory board members share their professional and technical expertise to enhance the engineering technology program and strengthen its future development.

Structural Design, Cert.

Program overview

The structural design certificate is for professionals who need formal training in proper design techniques to better perform the preliminary design functions that may be allocated to them under the supervision and guidance of a professional engineer. The certificate is a 20 quarter credit hour program that consists of five courses.

Curriculum

The curriculum covers the latest techniques in steel design, designated "load and resistance factor design," which is replacing the "allowable stress design" techniques still offered in many engineering and engineering technology curricula.

Prospective students are those with an associate degree in civil engineering technology (or a similar program) employed in a design environment who need additional training, or those with a bachelor's degree in civil engineering, civil engineering technology, or architecture employed in a design environment.

Certificate in structural design

COURSE		QTR. CR. HRS.
0608-404	Applied Mechanics	4
0608-490	Structural Analysis	4
0608-470	Timber Design	4
0608-496	Reinforced Concrete Design	4
0608-497	Structural Steel Design	4
Total Quarter Credit Hours		**20**

Computer Engineering Technology, BS

http://www.rit.edu/cast/ect

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Program overview

Embedded systems are at the heart of devices and systems used every day. Computer engineers design embedded systems for medical diagnostic equipment, digital cameras, missile guidance systems, anti-lock braking systems, scanners, copiers, switches, routers, and cell phones. The embedded systems designer requires knowledge of computer hardware and software.

The computer engineering technology program is designed to meet industry's ever-increasing need for engineers with an in-depth knowledge of hardware and software design and development. The curriculum bridges the gap between these two disciplines by providing a solid foundation in each and integrating them with intensive classroom and laboratory experiences.

From a software perspective, students gain a strong background in cutting-edge development with programming languages currently used in industry. Students learn industry standard approaches to application software development as well as state-of-the-art problem-solving techniques. Students learn techniques for developing applications code and firmware, and they understand and appreciate the difference. Embedded "C" and assembly language programming are performed in numerous courses.

The hardware focus of the curriculum is on digital systems design and development. From low-level gate design to high-end microprocessors and current bus standards, students 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, and state-of-the-art computer technology. Students perform schematic entry timing analysis and FPGA development in VHDL using industry standard computer-aided engineering tools.

A capstone experience in the fifth year enables students to integrate their hardware and software expertise in a quarter-long project course.

The emphasis on hardware and software design, along with a solid foundation in math, science, and the liberal arts, produces graduates who are well-prepared to enter the work force as design engineers or to pursue advanced degrees. Students will gain depth of knowledge and breadth of experience that will inspire them to pursue successful careers in their chosen professional field and embark on a path of lifelong learning.

Accreditation

The computer engineering technology program is accredited by the Technology Accreditation Commission of ABET, http://www.abet.org.

Curriculum

Computer engineering technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0609-051, 052	Discovery, Pathways	2
0618-231, 232	Technical Programming I, II	8
0618-301	Digital Fundamentals	4
0609-214, 215,216	Circuit Theory I, II, III	12
1016-261, 262	Calculus with Foundations I, II	8
1016-272	Calculus B	4
0618-303	Microcomputers	4
	Liberal Arts*	12
	Wellness Education†	0
Second Year		
1016-319	Data Analysis	4
0618-233	Technical Programming III	4
0609-360, 361	Electronics I, II	8
1017-211, 212, 213	College Physics I, II, III	12
	Liberal Arts*	12
1016-273	Calculus C	4
Third Year		
0618-438	Digital Systems Design I	4
0618-439	Electronic Design Automation	4
	Technical Elective	4
0609-407	Career Orientation	1
0614-477	Networking Technologies	4
1017-320	Principles of Optics	4
1016-304	Differential Equations for Engineering Technology	4
0535-403	Effective Technical Communication	4
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
0618-561, 562	Embedded Systems Design I, II	8
0609-333	Concepts in Systems and Signals	4
	Professional Concentration Elective	4
0609-442	Advanced Electronics	4
	Liberal Arts*	8
	Free Elective	4
	Cooperative Education (2 quarters)	Co-op
Fifth Year		
0618-563	Embedded Systems Design III	4
	Professional Concentration Electives	8
	Liberal Arts*	4
0614-440	Ethics, Economics, and Planning for Engineers	4
	Free Electives	8
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**187**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.

Electives

There is a need in the computer industry for professionals with diversified areas of expertise. The program requires a three-course professional concentration sequence that allows students to customize their education yet ensures depth of knowledge in sub-ject matter beyond the core curriculum. Concentrations are offered in computer science, systems administration, IT wireless networks, telecommunications, and communications systems.

Computer Science

4003-263	Computer Science for Transfers	
4003-450	Programming Language Concepts	
4003-440	Operating Systems I	

Systems Administration

4050-402	OS Scripting	
4050-421	Systems Administration I	
4050-516	Network Services	

IT Wireless Networks

4050-351	Network Fundamentals	
4050-403	Concepts of Wireless Networking	
4050-413	Applications of Wireless Networks	

Telecommunications

0614-271	Telecommunications Fundamentals	
0614-465, 466	Voice Communications Technology	
0614-475	Switching Technologies	

Communication Systems

0609-363	Electronics IV	
0609-534	Communication Systems I	
0609-547	Digital Signal Processing	

In addition to the professional concentration electives, the curriculum has three free electives that may be used to pursue minors, to provide additional technical expertise for greater career specialization, or to explore courses that fulfill personal interests.

Cooperative education

The program requires students to complete five quarters of cooperative education. Students may begin their co-op experience in the third year of the program. Each student is assigned a co-op adviser to assist in identifying placements.

Accelerated dual degree option

The program, in conjunction with the department of computer science in the B. Thomas Golisano College of Computing and Information Sciences, offers an accelerated dual degree option that combines the bachelor's degree in computer engineering technology and a master's degree in computer science in a cohesive, five-year curriculum.

Applications to this program are accepted from matriculated undergraduate computer engineering technology students who have completed all the courses in the first five quarters of the baccalaureate program and have maintained a cumulative grade-point average of at least 3.4 out of 4.0. At least 55 quarter credit hours must have been earned at RIT. This program requires the maintenance of at least a 3.0 cumulative grade-point average and at least a 3.0 in the 45 quarter credit hours directly applicable to the master of science degree.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Electrical Engineering Technology, BS

http://www.rit.edu/cast/ect

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Program overview

The bachelor of science degree in electrical engineering technology provides students with a foundation in circuits, analog and digital electronics, physics, calculus, and the liberal arts. The third and fourth years expand on the fundamental courses with more advanced course work in applied differential equations, advanced circuits and electronics, transform methods, control systems, analog and digital electronics, mechanical engineering technology, and additional liberal arts courses. Students choose free electives or mechanical/manufacturing and professional electives to round out the program. Professional electives include sequences in electric power systems, electronic communications, embedded systems, telecommunications, networking, and optics. Several electives also are available from other technical disciplines, and the student's academic adviser can assist in determining the best choices for career goals and objectives. The upper division of the program provides a viable option for students who have completed their associate degree and wish to continue their education in engineering technology.

The BS is a five-year program that includes a year of cooperative education experience for full-time students. Students are required to complete five quarters of co-op and may begin their co-op experiences in the third year of the program. A co-op counselor is assigned to each student.

Accreditation

The bachelor of science degree in electrical engineering technology is accredited by the Technology Accreditation Commission of ABET, http://www.abet.org.

Curriculum

Electrical engineering technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0618-213	ExCiTe Introduction to ECT ET	4
0609-214, 215, 216	Circuit Theory I, II, III	12
1016-261, 262	Calculus with Foundations I, II	8
0609-051, 052	First-Year Enrichment I, II	2
	Liberal Arts*	12
0618-231	Technical Programming I	4
1017-211	College Physics I	4
0618-301	Digital Fundamentals	4
1016-272	Calculus B	4
	Wellness Education†	0
Second Year		
0609-360, 361, 362	Electronics I, II, III	12
	Liberal Arts*	12
0609-337	Machines and Transformers	4
1017- 212, 213	College Physics II, III	8
1016-273	Calculus C	4
1016-319	Data Analysis	4
	Wellness Education†	0
0618-303	Microcomputers	4

COURSE		QTR. CR. HRS.
Third Year		
0618-438	Digital Systems Design I	4
0609-363	Electronics IV	4
	Technical Elective	4
1016-304	Differential Equations for Engineering Technology	4
0535-501	Public Speaking	4
0609-407	Career Orientation	1
0502-444	Technical Writing	4
0618-439	Electronic Design Automation	4
0609-333	Concepts in Systems and Signals	4
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
	Free Elective	4
	Liberal Arts*	8
0609-547	Digital Signal Processing	4
0609-403	Advanced Circuit Theory	4
	Mechanical/Manufacturing Engineering Technology Elective	4
0609-442	Advanced Electronics	4
0609-408	Transmission Lines	4
	Cooperative Education (2 quarters)	Co-op
Fifth Year		
0609-404	Control Systems I	4
0614-440	Ethics, Economics and Planning for Engineers	4
	Professional Electives	8
	Free Electives	8
	Liberal Arts*	4
	General Education Elective	2
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**197**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Possible professional electives

Option	Course Title		Prerequisite(s)
Power Systems	0609-550	Power Systems I	0609-337 or 0609-411
	0609-552	Power Systems II	0609-550
Communications Systems	0609-534	Communication Systems I	0609-333 and 0609-363
	0614-520	Fiber Optic Telecommunications Technology	1016 304, 1017 212 and (0614 483 or 0609 408)
Embedded Systems	0618-561	Embedded System Design I	0618-438
	0618-562	Embedded System Design II	0618-439 and 0618-561
Telecommunications	0614-561	Network Engineering (3 credits)	1016-304, 0614-477, 0614-475
		< AND >	
	0614-562	Network Engineering Lab (1 credit)	
	0614-574	Networking Planning and Design	0614-479, 0614-561, 562

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Graduates

Graduates of the program are well-prepared to pursue careers in a number of fields related to electrical engineering technology. Graduates enter not only design and development but related disciplines, including manufacturing, research, sales and marketing, applications engineering, and education. To attain these objectives, detailed program outcomes are specified for graduates. These can be found on the department website, www.rit.edu/ect.

Electrical/Mechanical Engineering Technology, BS

http://www.rit.edu/cast/mmetps/

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Program overview

With both the increased complexity of product design and the merger of mechanical and electrical aspects of design, there is a growing need for professionals who have a strong foundation in the electrical, mechanical, and manufacturing disciplines. Graduates from the electrical/mechanical engineering technology program are able to effectively bridge the gap between coworkers with more specialized backgrounds.

Goals

The program prepares graduates for professional careers in the broad field of engineering technology, where an integration of mechanical, electrical, and manufacturing disciplines is important. The program provides the maximum amount of flexibility in transfer from other RIT programs and a variety of two-year programs, including engineering science and engineering technology.

Accreditation

The program is accredited by the Technology Accreditation Commission of ABET, http://www.abet.org.

Curriculum

The program's core consists of 66 quarter credit hours covering the disciplines of electricity, electronics, microprocessors, mechanics, materials, thermal science, solid modeling, and manufacturing processes. After completing the core, students may select a technical concentration, which consists of three courses in a particular discipline. Students may use this concentration to either tailor the degree to meet specific employment objectives or establish a technical minor. Technical concentrations are available in electrical power systems, manufacturing management, telecommunications, and structures—civil, safety technology, and environmental management. Additional concentrations may be developed to meet the needs of a student's career goals or interests. Students will also complete 24 quarter credit hours of electives (12 as free electives and 12 as technical electives). In addition, students take general education courses in mathematics, physics, chemistry, communications, programming, and the liberal arts.

Electrical/mechanical engineering technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1720-051, 052	First-Year Enrichment I, II	2
0617-220	Manufacturing Processes	4
1016-230	Precalculus	4
0617-262	Solid Modeling and Design	4
1017-211	College Physics I	4
1016-231, 232	Calculus for Engineering Technology I, II	8
	Liberal Arts*	16
0618-301	Digital Fundamentals	4
0610-211	Introduction to Materials Technology	3
0610-304	Materials Testing	1
Second Year		
0610-408, 410	Applied Mechanics I, II	8
1017-212, 213	College Physics II, III	8
1016-304	Differential Equations for Engineering Technology	4
1016-319	Data Analysis	4
0614-271	Telecommunications Fundamentals	4
0609-337	Electrical Machines and Transformers	4
0609-411	Electrical Principles I	4
	Liberal Arts*	8
0535-403	Effective Technical Communications	4
0610-432	Computers in Mechanical Engineering Technology	2
	Wellness Education†	0
Third Year		
1011-208	College Chemistry	4
0618-231	Technical Programming I	4
	Technical Elective	4
0609-413	Applied Microprocessors	4
0606-099	Co-op Preparation	0
0609-412	Electric Principles II	4
	Liberal Arts*	4
0660-401, 402	Thermal Fluid Sciences I, II	5
0610-407	Mechanical Engineering Technology Lab I	2
	Wellness Education†	0
1011-273, 277	Introduction to Chemistry of Materials, Lab	4
0660-499	Cooperative Education	Co-op
Fourth Year		
0617-470	Controls for Manufacturing Automation	4
0610-416	Materials Technology	4
0617-440	Production and Operations Management I	4
0610-409	Mechanical Engineering Technology Lab II	2
0660-499	Cooperative Education	Co-op
	Liberal Arts*	8
0660-403	Thermal Fluid Science III	3
	Upper-Division Technical Concentration	4
	Technical Elective	4
Fifth Year		
0610-499	Cooperative Education	Co-op
0617-436	Engineering Economics	4
	Upper-Division Technical Concentration	7-8
	Free Electives	12
	Technical Elective	8
	General Education Elective	2
Total Quarter Credit Hours		**202**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Manufacturing Engineering Technology, BS

http://www.rit.edu/cast/mmetps/man.php

Scott Anson, Program Chair
(585) 475-4474, sjamet@rit.edu

Program overview

The present shortage of qualified manufacturing engineers and technologists is between 50,000 and 100,000 people—and the need is increasing. Manufacturing engineers are retiring faster than graduates are produced, resulting in outstanding employment opportunities. In addition, industrial productivity and technological innovations are driving the demand for well-prepared manufacturing engineers.

The manufacturing engineering technology program prepares students to meet the demand for personnel well-versed in the new manufacturing technologies, which include computer-aided design, computer numerical control, microprocessor controls, robotics, computer-aided manufacturing, flexible manufacturing systems, assembly automation, and electronics manufacturing.

Goals

The goal of the program is to prepare individuals for professional employment in the fields of product design, development, and manufacturing. The program is designed to provide the skills necessary for applying emerging manufacturing technologies. A cooperative education program enhances these skills by allowing students to gain valuable experience working in the manufacturing industries. Throughout the academic program, a significant amount of hands-on laboratory experience in manufacturing is provided.

Accreditation

The manufacturing engineering technology program is operated on the cooperative education plan and is accredited by the Technology Accreditation Commission of ABET, http://www.abet.org.

Curriculum

The curriculum has been designed with the aid and consultation of professionals in the field and emphasizes computer-integrated manufacturing and product development. Courses cover traditional and nontraditional manufacturing processes, fundamentals of electronics and microprocessors, computer-aided design, computer numerical control, robotics, group technology, computer-aided process planning, materials requirements planning, surface-mount electronics design and assembly, flexible manufacturing systems, quality control, engineering economics, value analysis, plastics manufacturing, manufacturing management, and lean manufacturing.

Manufacturing engineering technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0610-211	Introduction to Materials Technology	3
0610-304	Materials Testing	1

COURSE		QTR. CR. HRS.
0617-220	Manufacturing Processes I	4
1016-231	Calculus for Engineering Technology	4
1720-051, 052	First-Year Enrichment	2
0617-262	Solid Modeling and Design	4
0617-420	Manufacturing Processes II	4
1016-232	Calculus for Engineering Technology II	4
0610-220	Design Dimensioning and Tolerancing	4
1016-304	Differential Equations for Engineering Technology	4
1017-211	College Physics I	4
	Liberal Arts*	12
Second Year		
0610-302	Introduction to Statics	4
0610-305	Pneumatics and Hydraulics	4
1016-319	Data Analysis I	6
1017-212, 213	College Physics II, III	8
0609-411	Electrical Principles for Design I	4
0610-303	Strength of Materials	4
	Liberal Arts*	4
	Wellness Education†	0
0610-315	Principles of Mechanical Design I	4
0610-309	Computational Methods for Engineering Technology	1
	Ethics Elective	4
0535-403	Effective Technical Communication	4
	Free Elective	4
Third Year		
0606-099	Cooperative Education Preparation	0
0617-455, 457	Introduction to Electronics Packaging, Lab	5
0617-485	Robots in Manufacturing	4
0618-231	Technical Programming	4
0617-436	Engineering Economics	4
0617-471	Computer Numerical Control	4
1011-208	College Chemistry	4
	Free Electives	4
	Liberal Arts*	4
	Cooperative Education	Co-op
Fourth Year		
0617-440	Production and Operations Management I	4
0610-416	Materials Technology	4
0617-470	Controls for Manufacturing Automation	3
0617-441	Production and Operations Management II	4
	Liberal Arts*	12
0610-409	Mechanical Engineering Technology Lab II	2
0617-472	Tool Engineering	4
1016-320	Data Analysis II	6
	Cooperative Education	Co-op
Fifth Year		
0617-475	Computer-Aided Manufacturing	4
	Technical Electives	8
0617-510	Process Design	4
	Liberal Arts*	12
	Free Elective	4
	Cooperative Education	Co-op
Total Quarter Credit Hours		**205**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Part-time option

For students who are employed full time, the upper division of this program may be taken on a part-time basis during the evening. It normally takes approximately 13 quarters for the typical evening student to complete the upper-division course requirements. In the early quarters, the fundamentals of mathematics, science, engineering, electronics, and processes are emphasized to provide a foundation for later courses in computer-integrated manufacturing and technical electives. Students also may elect certain courses from other programs.

Note: Some technical electives are offered only every other year. Please check with an adviser when planning the program's technical elective content.

Mechanical Engineering Technology, BS

http://www.rit.edu/cast/mmetps/mech.php

William Leonard, Program Chair
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Program overview

Mechanical engineering technology involves understanding how products and machinery work and how to design, make, or use them. From consumer products to high-performance automobiles, air-conditioned environments and jet aircraft, mechanical engineering technology has changed society for the better.

Students study the foundations of mechanics, materials, and energy and learn technical skills such as computer-aided design, computer-aided engineering, testing materials, and making parts. Students apply these principles and skills to the various fields of mechanical engineering technology—such as product and machine design, power generation, utilities and manufacturing—through laboratories and design projects. Full-time students gain valuable industrial experience through the required cooperative education program.

Goals

Students are prepared for professional careers in machine design; manufacturing; test engineering; field service engineering; technical sales; thermal design; product design; utilities operations; heating, ventilating, and air-conditioning design; or plant operations. The program emphasizes the development of a design methodology and is reinforced by project-oriented assignments.

Accreditation

The BS in mechanical engineering technology program is accredited by the Technology Accreditation Commission of ABET, http://www.abet.org.

Curriculum

Students first develop their skills in the fundamentals of mechanics, mathematics, materials technology, and computer-aided

design. Later, courses focus on both mechanical design and applied thermofluid engineering. The program includes five technical electives and three free electives. These courses can be used to create a specialization in such areas as product design, air conditioning, thermal power, plastics processing, and manufacturing.

A substantial amount of laboratory and product work is required. Teamwork, technical writing, and computer use are emphasized throughout the program.

Concentrations

In the last three quarters of the program, students may select a concentration in one of the following areas:
- product design
- heat, power, and HVAC
- plastics processing

Customized concentrations may be developed with department approval.

Mechanical engineering technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0610-211	Introduction to Materials Technology I	3
0610-304	Materials Testing	1
0617-220, 420	Manufacturing Processes I, II	8
1016-231	Calculus for Engineering Technology	4
1720-051, 052	First-Year Enrichment	2
0617-262	Solid Modeling and Design	4
1016-232	Calculus for Engineering Technology II	4
0610-220	Design, Dimensioning, and Tolerancing	4
1016-304	Differential Equations for Engineering Technology	4
1017-211	College Physics I	4
	Liberal Arts*	12
Second Year		
0610-302	Introduction to Statics	4
0610-305	Pneumatic and Hydraulic Systems	4
1016-319, 320	Data Analysis I, II	10
1017-212, 213	College Physics II, III	8
0617-436	Engineering Economics	4
0609-411	Electrical Principles for Design I	4
0610-303	Strength of Materials	4
	Liberal Arts*	4
	Wellness Education†	0
0610-315	Principles of Mechanical Design	4
0610-309	Computational Methods for Engineering Technology	1
	Ethics Elective	4
Third Year		
0606-099	Cooperative Education Preparation	0
0535-403	Effective Technical Communication	4
0610-405	Applied Dynamics	4
0610-460	Applied Fluid Mechanics	4
1011-208	College Chemistry	4
0610-409	Mechanical Engineering Technology Lab II	2
0610-416	Materials Technology	4
0610-440	Applied Thermodynamics	4
1011-273, 277	Introduction to Chemistry of Materials, Lab	4
	Liberal Arts*	4
	Cooperative Education	Co-op
Fourth Year		
0610-403	Failure Mechanics	4
0610-407	Mechanical Engineering Technology Lab I	2

COURSE		QTR. CR. HRS.
	Technical Elective	8
0610-506	Machine Design I	4
0610-465	Thermofluids Lab	3
	Liberal Arts*	8
	Cooperative Education	Co-op
Fifth Year		
	Technical Electives	12
	Free Electives	12
	Liberal Arts*	8
	Cooperative Education	Co-op
Total Quarter Credit Hours		**196**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Evening option

Students who are employed full time and wish to pursue the BS in mechanical engineering technology may take the upper-division portion of this program part time during evening hours. The typical evening student requires approximately 13 quarters to complete the upper-division course requirements. Students also may elect certain courses from the computer-integrated manufacturing engineering technology and electrical engineering technology programs with department approvals.

Note: Some electives are not offered every year. Please check with an adviser when planning the program's technical electives.

Mechanical Technology, AAS

Program overview

The associate degree in mechanical engineering technology is designed to prepare technicians for employment in the mechanical design and manufacturing fields. The program is offered part time and in the evenings.

Curriculum

The AAS program in mechanical technology is identical to the lower division of the full-time BS degree program in mechanical engineering technology. The curriculum prepares students to continue their studies toward a baccalaureate degree in engineering technology. The program begins with courses in mathematics, physics, computer-aided drafting and design, and manufacturing processes. The advanced portion of the technical program covers topics in mechanics, hydraulics, materials, and machine design. Courses in composition, communication, social science, and humanities round out the program.

Mechanical technology, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0610-211	Introduction to Materials Technology I	3
0610-304	Materials Testing	1
0617-220, 420	Manufacturing Processes I, II	8
1016-231, 232	Calculus for Engineering Technology I, II	4
1720-051, 052	First-Year Enrichment	2
0617-262	Solid Modeling and Design	4
0610-220	Design, Dimensioning, and Tolerancing	4
1017-211	College Physics I	4
	Liberal Arts*	16
Second Year		
0610-302	Introduction to Statics	4
0610-305	Pneumatic and Hydraulic Systems	4
1016-319, 320	Data Analysis I	10
1017-212, 213	College Physics II, III	8
	General Electives	8
	Wellness Education†	0
0610-315	Principles of Mechanical Design	4
0610-309	Computational Methods for Engineering Technology	1
	Technical Electives	8
Total Quarter Credit Hours		**93**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Telecommunications Engineering Technology, BS

http://www.rit.edu/cast/ect

Michael Eastman, Department Chair
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Program overview

The telecommunications industry drives technological innovation, giving us everything from the basic ability to transmit text and voice to the sophisticated communications systems that businesses and individuals depend upon every day. The industry has grown from providing simple telephone service to offering a wide range of audio, video, and data communication services, including voice, broadband Internet, broadcast video, and wireless services. Whether you are calling next door or exchanging data with a probe on a distant planet, telecommunication is involved.

The telecommunications engineering technology program prepares students for exciting careers in this dynamic field. Through classroom and laboratory experience, students gain in-depth knowledge of the components and systems that make up the global telecommunications network. With a basis in electronics and computing, students learn about the media and devices that transport and direct communication signals through the network. Students become familiar with current technology and develop the tools they will need to work with future technology. The program emphasizes analytical methods to plan and design networks to meet the goals of quality, reliability, and cost. Students also learn about the policies and regulations that have shaped the industry around the world.

Curriculum

The telecommunications curriculum contains a number of electives for students to tailor their studies or pursue a minor. If students' interests lie in the applications of telecommunications equipment, opportunity exists to take courses from areas such as computer engineering technology, electrical engineering technology, and information technology. If students wish to pursue the management of telecommunications resources, a minor in business or management can provide the necessary background for the challenges they'll face as a future manager.

Accreditation

The telecommunications engineering technology program is accredited by the Technology Accreditation Commission of ABET, http://www.abet.org.

Cooperative education

The telecommunications engineering technology program requires students to complete five quarters of cooperative education. Students may begin their co-op experience in the third year of the program. Each student is assigned a co-op adviser to assist in identifying placements.

Telecommunications engineering technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1016-261, 262	Calculus with Foundations I, II	8
1016-272	Calculus B	4
0618-213	ExCiTe Introduction to ECT ET	4
0609-214	Circuit Theory I	4
0614-271	Telecommunications Fundamentals	4
0609-215	Circuit Theory II	4
0618-301	Digital Fundamentals	4
	Liberal Arts*	12
0609-216	Circuit Theory III	4
Second Year		
0609-360, 361, 362	Electronics I, II, III	12
0609-216	Circuit Theory III	4
1016-273	Calculus C	4
0618-232	Technical Programming II	4
1017-211, 212, 213	College Physics I, II, III	12
0614-465, 466	Voice Communications Technology	4
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
1016-304	Differential Equations for Engineering Technology	4
0609-333	Concepts in Signals and Systems	4
0614-477	Networking Technologies	4
0609-363	Electronics IV	4
0609-407	Career Orientation	1
0535-403	Effective Technical Communications	4
	Technical Electives	8
	Cooperative Education (2 quarters)	Co-op
1016-319	Data Analysis I	4
Fourth Year		
0614-480	Introduction to Telecommunications Policy	4
0614-483, 484	Telecommunications Transmission Systems, Lab	4
0614-475	Switching Technologies	4
	General Education Elective	4

COURSE		QTR. CR. HRS.
	Free Elective	4
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
0614 -520	Fiber Optic Telecommunication Technology	4
Fifth Year		
0614-561, 562	Telecommunications Network Engineering, Lab	4
0609-534	Communication Systems I	4
	Liberal Arts*	4
	Free Electives	8
	General Education Elective	4
0614-574	Network Planning and Design	4
0614-440	Ethics, Economics, and Planning for Engineers	4
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**197**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.

Accelerated dual degree option

Qualified students may pursue the simultaneous award of a BS degree and an MS degree in telecommunications engineering technology. This 230-quarter-credit-hour option includes a minimum of 48 quarter credit hours of graduate course work plus four quarters of cooperative education experience. The option is offered to students who have completed four quarters of study (excluding co-op) and who have attained an overall GPA of at least 3.4. The BS/MS program can be completed in five years of full-time study.

A sample schedule is shown. Note that a student may elect to complete a master's thesis for 6 credits or a master's project for 2 credits. In the latter case, the student must complete an additional graduate elective course.

Telecommunications engineering technology, BS/MS option, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0609-051, 052	ECT ET First-Year Enrichment I, II	2
0618-213	ExCiTe Introduction to ECT ET	4
1016-261, 262	Calculus with Foundations I, II	8
1016-319	Data Analysis I	4
0609-214	Circuit Theory I	4
1017-211	College Physics I	4
0614-271	Telecommunications Fundamentals	4
0609-215	Circuit Theory I, II	4
1017-212	College Physics II	3
0618-301	Digital Fundamentals	4
	Liberal Arts*	8
Second Year		
0609-360, 361	Electronics I, II,	8
0609-216	Circuit Theory III	4
1016-272, 273	Calculus B, C	8
0618-231, 232	Technical Programming I, II	8
1017-213	College Physics III	4
0614-465, 466	Voice Communications Technology, Lab	4
	Liberal Arts*	12
0609-407	Career Orientation	1
	Wellness Education†	0
Third Year		
1016-304	Differential Equations for Engineering Technology	4
0609-333	Concepts in Signals and Systems	4

COURSE		QTR. CR. HRS.
0614-477	Networking Technologies	4
0618-303	Microcomputers	4
0609-363	Electronics IV	8
	General Education Elective	4
	Technical Electives	4
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
0614-780	Telecommunications Policy and Regulation	4
0535-403	Effective Technical Communications	4
0614-783	Telecommunications Transmission Systems	4
0614-479	Network Management	4
0614-475	Switching Technologies	4
	Technical Electives	8
	Free Electives	8
	Liberal Arts*	8
0614-440	Ethics, Economics, and Planning for Engineers	4
	Cooperative Education (1 quarter)	Co-op
Fifth Year		
0614-761	Telecommunication Network Engineering	4
0614-764	Telecommunication Systems	4
0614-720	Telecommunication Concepts	4
0614-722	Telecommunication Principles	4
0614-763	Wireless RF Telecommunications Systems	4
0614-774	WAN/LAN Planning and Design	4
	Graduate Elective	4
0614-890	Thesis/Project Planning	2
0614-892, 893	Master's Thesis or Project and Elective	6
0614-732	Fiber Optic Telecommunications Tech	4
	Liberal Arts*	8
	Free Elective	4
Total Quarter Credit Hours		**230**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Department of Manufacturing and Mechanical Engineering Technology/Packaging Science

Daniel P. Johnson, Chair

www.rit.edu/cast/mmetps/

The manufacturing and mechanical engineering technology/packaging science department is a leader in providing innovativecareer-oriented education in the design, manufacturing, packaging, and distribution of goods.

Instructional and research laboratories for all of theprograms are located in the College of Applied Science and Technology building and in the Center for Integrated Manufacturing Studies. Packaging laboratories include dynamics, materials, and environmental testing. Mechanical laboratories include mechanics and materials, thermofluids, plastics, pneumatics, and materials processing. Manufacturing laboratories include CAD, CIM/robotics, and surface-mount technology.

The BS programs in electrical/mechanical engineering technology, manufacturing engineering technology, and mechanical engineering technology are accredited by the Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Maryland 21202-4012, (410) 347-7700.

Accelerated dual degree options

Accelerated, five-year dual BS/MS degree options are for exemplary mechanical, manufacturing, and electrical/mechanical engineering technology students. (The combined BS/MS options are respectively known as the mechanical systems integration, manufacturing systems integration, and electrical/mechanical systems integration.) Graduation requires the successful completion of 230 quarter credit hours (or 229 hours for the electrical/mechanical systems integration program). After completing this requirement, the student is awarded the BS and MS degrees simultaneously. The MS degree is a master of science in manufacturing and mechanical systems integration. A student may apply to this option after receiving credit for at least 60 quarter credit hours. The most recent 30 quarter credit hours must be from RIT courses. The student must have at least a 3.2 cumulative grade point average at the time of application and must maintain a 3.0 cumulative GPA once admitted. (Students with cumulative GPAs less than 3.0 will automatically return to the BS program they started in and will not be eligible to reapply for the BS/MS program.)

The course work for the first eight quarters is the same as that for the first three years of either the mechanical, manufacturing, or electrical/mechanical engineering technology programs. However, in the spring quarter of the third year, the BS/MS student will not participate in a spring/summer co-op block. Instead, the student will take courses in the spring quarter and participate in co-op during the summer quarter. In the fourth and fifth years, the student will take more graduate-level courses. When finished, the student will meet all the graduation requirements for both the BS degree (in manufacturing, mechanical, or electrical/mechanical engineering technology) and an MS degree in manufacturing and mechanical systems integration.

The BS/MS student must complete the department's requirement of 48 weeks of cooperative education experience, which can be completed in four quarters, including the summer quarter between the second and third years. The BS/MS student may use three summer quarters and one other quarter to fulfill his or her co-op requirement. Students taking full course loads every quarter can complete the BS/MS requirements, including the co-op experience, within five calendar years. Students with significant advanced placement courses, or those who choose to take courses during their co-op assignments, may complete the BS/MS program in less than five years.

Packaging Science, BS

http://www.rit.edu/cast/mmetps/packaging/

Daniel Goodwin, Program Chair
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Program overview

The packaging science program prepares students for employment in areas such as package development, sales, purchasing, structural design, production, research, and marketing.

Packaging is increasingly related to total marketing concepts; it has even greater dependence on new developments in materials and processes. Therefore, the industry requires management personnel with creativity and a strong background in business, engineering, and science.

The program was developed as a result of a close and long-established relationship between the packaging industry and RIT. This multi-billion-dollar industry exhibits dynamic growth and provides employment for thousands of professionals with wide-ranging skills and expertise.

Industrial Advisory Board

The Industrial Advisory Board contributes professional and technical expertise to the packaging science program, which strengthens and develops the program to reflect the dynamics and growth of the industry.

Curriculum

Packaging science, BS degree, typical course sequence

COURSE		QRT. CR. HRS.
First Year		
0607-201	Principles of Packaging	3
0607-301	Engineering Design Graphics	4
0607-312	Packaging Materials II	4
1016-204	College Algebra and Trigonometry	4
1016-231	Calculus for ET	4
1011-208	College Chemistry	4
1011-273, 277	Introduction to Chemistry of Materials, Lab	4
1011-202, 207	Introduction to Organic Chemistry, Lab	5
0511-211	Principles of Microeconomics	4
	Liberal Arts*	8
	Wellness Education†	0
1720-051, 052	First-Year Enrichment	2
Second Year		
0607-311	Packaging Materials I	4
0607-321	Rigid Containers	4
0607-322	Flexible Containers	4
0607-341	Computer Applications	4
0607-420	Technical Communication	3
2082-371	Principles of Printing	4
0105-363	Principles of Marketing	4
1029-301	Introduction to Polymer Technology	2
1004-210	Microbiology in Health and Disease	4
0511-402	Principles of Macroeconomics	4
	Liberal Arts*	8
	Wellness Education†	0
0607-499	Cooperative Education	Co-op
Third Year		
0607-401	Career Seminar	1
0607-431	Packaging Production Systems	4
0607-432	Packaging for Distribution	4
0607-433	Packaging for Marketing	4
0607-485	Shock and Vibration	4
1017-211, 212	College Physics I, II	8
1016-319, 320	Data Analysis I, II	10
0535-501	Public Speaking	4
	Liberal Arts*	8
	Elective	4
0607-499	Cooperative Education	Co-op
Fourth Year		
0607-462	Packaging Regulations	4

COURSE	QRT. CR. HRS.
Professional (Packaging) Electives	12
Liberal Arts*	12
Electives	20
Total Quarter Credit Hours	**190**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Cooperative education

The packaging science program requires six months of cooperative education, in addition to the program's course work, to meet graduation requirements.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Department of Civil Engineering, Environmental Management and Safety

Environmental Sustainability, Health and Safety, BS

http://www.rit.edu/cast/cetems

John Morelli, Department Chair
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Program overview

The BS degree in environmental sustainability, health, and safety is focused on social responsibility for our activities and being good stewards of the products we make and the services we provide. The program prepares students to work as environmental sustainability, health, and safety professionals in both industry and government. Students gain a strong foundation in science, applied environmental, health and safety science and technology, sustainability and social responsibility, and are provided with the basic tools of financial management, team building, and leadership.

Students are ready to eliminate, reduce, and control the release of pollutants into the environment and to manage health and safety hazards associated with an organization's activities, products, and services. The program emphasizes globally sustainable and socially responsible approaches and prepares professionals to become leaders in moving toward a more sustainable and socially responsible future.

The most rewarding aspect of an environmental management and technology career is that students can start making a difference right away. There is so much that can be done at every level that students will feel good about their contributions from their first day on the job.

Curriculum

Environmental sustainability, health and safety, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0630-200	ESHS Seminar	1

COURSE		QTR. CR. HRS.
0608-199	First-Year Experience	2
1016-225	Algebra for Management Science	4
1011-215, 216, 205, 206	General and Analytical Chemistry I, II and Lab	9
0630-201	Principles of ESHS	4
1004-212, 232	Human Biology II and Lab	4
1005-210	Field Biology	4
0688-327	Environmental Communications	4
1011-202	Foundations of Organic Chemistry	4
	Liberal Arts*	12
Second Year		
1017-211	College Physics I	4
1016-226	Calculus for Management Science	4
1017-212	College Physics II	4
1016-319, 320	Data Analysis I, II	10
	Economics	4
0608-225	Problem Solving and Communication with Computers	2
0630-370, 372	Environmental Geology and Lab	4
0630-450, 451	Occupational Health and Lab	4
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
0630-352	Industrial Wastewater Management	4
0630-380, 382	Hydrology and Lab	4
0101-301	Financial Accounting	4
0630-454	Occupational Safety	4
0630-350	Solid and Hazardous Waste Management	4
0630-354	Air Emissions Management	4
0630-360, 362	Environmental Monitoring and Measurement and Lab	4
0509 211	Ethics	4
0606-099	Cooperative Education Preparation	0
0630-499	Cooperative Education	Co-op
Fourth Year		
0630-480	EHS Law	4
0630-463	Social Responsibility and Environmental Sustainability	4
0102-320	Organizational Behavior	4
0630-450	Occupational Health	4
0630-461	EHS Accident Causation and Prevention	4
0633-505, 506	Construction Safety/Lab	4
	Free Elective	4
	Liberal Arts*	4
0630-499	Cooperative Education	Co-op
Fifth Year		
0630-515	Corporate EHS Management	4
0630-590	ESHS Capstone Proposal	2
	Professional Electives	8
	Liberal Arts*	8
	Free Elective	8
0630-591	ESHS Capstone Project	2
0630-499	Cooperative Education	Co-op
Total Quarter Credit Hours		**193**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Cooperative education

A minimum of four quarters of cooperative education is required in the program. Students start their first co-op experience in the spring of their third year. Co-op provides students with the opportunity to apply their skills in multiple, real-world situations before they graduate. Our co-op students are especially valuable to organizations because they are well-qualified and well-prepared to take on the many interesting environmental projects organizations seem never to have the time to get done otherwise. Co-ops range from field research to office work, and employers range from government to industry. Co-ops are often located in the Rochester area or near a student's hometown, but some more adventurous individuals seek jobs across the continent or overseas.

Electives

A wide variety of electives within the curriculum permits students to develop various competency areas or pursue areas of interest in greater depth.

Technical electives

Students will take at least three professional electives from one of the sequences shown below. With departmental approval, professional electives may be selected from existing courses in other RIT colleges. Also, independent study projects may be pursued for credit in cases where students demonstrate unusual ability and obtain sponsorship of a faculty adviser.

Environmental Consulting

0630-444	Remedial Investigation and Corrective Action	
0630-490	Project Management	
0630-500	Contaminant Hydrology	
0630-570	Environmental Risk Management and Communication	

Health and Safety

0633-530	Mechanical and Electrical Controls	
0633-401	Fire Protection	
0303-415	Ergonomics	

Alternative Energy

1055-300	The Greening of RIT (Honors)	
1011-305	Introduction to Hydrogen Technology	
0521-451	Energy Policy	
0630-500	Special Topic: Alternative Energy Resources	
0304-629	Renewable Energy Systems	
0304-633	Sustainable Energy Management	

Sustainability

0106-401	Operations and Supply Chain Management	
0630-465	Product Stewardship	
0508-490	Biodiversity and Society	
0508-491	Sustainable Communities	
0630-505	Resource Reduction	

Emergency Management

0634-401	Emergency Preparedness Law	
0634-471	Emergency Planning and Methodology	
0634-474	Counter Terrorism for the First Responder	
0634-481	Emergency Operations	

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Environmental Management and Technology, BS/MS

http://www.rit.edu/cast/cetems/

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Program overview

Qualified environmental management and technology undergraduate students may pursue an accelerated, five-year, dual degree (BS/MS) option, resulting in the simultaneous award of a BS degree in environmental management and technology and an MS degree in environmental, health, and safety management. The BS/MS program requires the completion of 232 quarter credit hours, including 50 quarter credit hours of graduate course work, plus three quarters of cooperative education experience. The BS/MS program is an option for students who are already enrolled in the BS in environmental management and technology program, have completed at least four quarters of undergraduate study, and have a cumulative GPA of at least 3.2.

Curriculum

A typical course schedule for completing the BS/MS program is shown. Students interested in pursuing this option should work with their program advisers and start following this course schedule during their freshman year.

Environmental technology and EHS, BS/MS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1011-205, 206, 215, 216	General and Analytical Chemistry I, II, and Labs	9
1016-225	Algebra for Management Science	4
1016-226	Calculus for Management Science	4
0630-200	Environmental Management, Health, and Safety Seminar	1
0630-201	Principles of Environmental Management	4
1011-202	Fundamentals of Organic Chemistry	4
1005-210	Field Biology	4
0688-327	Environmental Communication	4
1004-212, 232	Human Biology II, Lab	4
	Liberal Arts*	12
1720-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
	Wellness Education†	0
1016-319, 320	Data Analysis I, II	8
	Professional Elective	4
1017-211, 212, 271, 272	College Physics I, II, and Labs	10
0630-370, 372	Environmental Geology, Lab	4
0608-225	Problem Solving and Communication with Computers	2
0630-450, 451	Occupational Health	5
	Liberal Arts*	16
	Free Elective	4
0606-099	Cooperative Education Preparation	0
	Cooperative Education (1 quarter)	Co-op

COURSE		QTR. CR. HRS.
Third Year		
0630-380, 382	Introduction to Hydrology, Lab	4
0630-350	Solid and Hazardous Waste Management	4
0630-454	Occupational Safety	4
0630-526	Exposure Assessment and Analysis	4
0630-354	Air Emissions Management	4
0630-352	Industrial Wastewater Management	4
0630-360, 362	Environmental Monitoring and Measurement, Lab	4
0630-461	Principles of EHS Accident Causation and Prevention	4
	Liberal Arts*	8
	Free Elective	4
	Cooperative Education (1 quarter)	Co-op
Fourth Year		
0630-480	EHS 1	4
0630-515	Corporate EHS Management	4
0630-463	Social Responsibility and Environmental Sustainability	4
	Professional Elective (graduate)	4
	Professional Electives (undergraduate)	8
	Free Elective	4
	Liberal Arts*	8
0630-755	Research Methods	4
0102-701	Organizational Behavior and Leadership	4
	Cooperative Education (1 quarter)	Co-op
Fifth Year		
0630-720	EHS Management	4
0630-725	EHS Accounting and Finance	4
0630-740	EHS Management System Design	4
0630-760	Integrating EHS into Business Management	4
0630-790	EHS Internal Auditing	4
0630-890	Thesis Planning§	4
0630-891, 899	Graduate Project/Thesis	4
	Professional Electives (graduate)	8
Total Quarter Credit Hours		**229‡**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ The total credit hours include 181 credit hours of undergraduate course work and 48 credit hours of graduate course work.
§ If student is not completing a thesis, he or she may select a professional elective in place of thesis planning (0630-890).

School of International Hospitality and Service Innovation

www.rit.edu/hsm

The School of International Hospitality and Service Innovation offers a bachelor of science degree in international hospitality and service management.

Faculty

Faculty members have outstanding academic credentials and industry experience. They serve in professional and trade associations at the national level, are frequent guest speakers, and consult in their fields of expertise: travel, food marketing, hospitality operations, nutrition, human resources, and health care, to name a few.

Advisory board

The National Advisory Board contributes professional and technical expertise to undergraduate programs to strengthen their development.

Admission guidelines

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

International programs in Croatia

The American College of Management and Technology in Dubrovnik, Republic of Croatia, is a branch of RIT that enrolls approximately 600 undergraduate students. The college offers associate of applied science and bachelor of science degrees in international hospitality and service management. The Dubrovnik campus provides an exchange opportunity for Rochester campus students who may wish to spend a quarter studying abroad. Classes are taught by a combination of RIT faculty members and European instructors.

Facilities

Commercial equipment and laboratories enhance the educational experience of all students in our hospitality program. Henry's, a full-service, licensed restaurant, provides an excellent training environment for students, who manage the restaurant during regular dining hours, special luncheons, and dinners. The food lab is commercially equipped for developing, testing, and evaluating new food products and equipment.

Information management is a critical element in the service industry. A computer laboratory and training studio allow students to prepare for the technology they will encounter on the job. Database, spreadsheet, and numerous other types of software are used in conjunction with classroom activities.

International Hospitality and Service Management, BS

http://www.rit.edu/hsm

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Program overview

The BS degree in international hospitality and service management prepares students for a wide variety of career choices in food management, hotel/resort management, health care management, corporate travel management, food marketing sales and distribution, and human resources. A career in the hospitality industry has become highly specialized in today's business world, and RIT graduates are in demand.

The program's concentrations provide broad-based views of service management, hospitality, travel, and client care through a common core of courses. This approach promotes an understanding of the interrelationships among the food, lodging, travel, and health care industries based on the underlying concept of quality service management. This approach allows students to retain the flexibility to switch majors or jobs if their career goals change.

These diverse and specialized fields require creative problem solving, technical knowledge, communication skills, and leadership.

RIT's program is among the nation's leading hospitality and travel management programs, recognized by *Forbes*, *Travel Weekly*, *Nation's Restaurant News*, and *Corporate Travel* magazines. The program is accredited by the Middle States Association of Colleges.

Our alumni come from around the United States and from more than 38 countries.

Curriculum

The program's curriculum is rigorous and challenging as it provides opportunities for students to develop their full potential in a managerial environment. The program is integrated, encompassing a broad base of competencies defined in partnership with faculty, students, and industry. Students take courses that build a strong concept of the industry as a whole by studying accounting, marketing, finance, economics, business management, behavioral sciences, human resource management, service management, nutrition, food preparation, food and beverage service principles, hotel operations, travel, tourism, and other topics.

In addition, some students may opt to create their own unique concentration based upon their interests. A preplanned set of courses must be completed with an adviser.

Cooperative education

The international hospitality and service management program requires each student to combine 1,200 hours of practical cooperative education experience with classroom theory. In co-op placements, students are introduced to hands-on learning in the service industry. Co-op usually is completed in the summer following the freshman and sophomore years and during any quarter in the junior and senior years, except the final quarter 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.

International hospitality and service management, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0619-220	Survey of Service Management	2
0619-221	Basic Computer Applications	2
	Program Concentration	12
	HSM Elective	4
1016-225	Algebra for Management Science	4
	Science Electives with Lab	8
	Liberal Arts*	16
	Wellness Education†	0
1105-051, 052	First-Year Enrichment	2
0621-499	Cooperative Education	Co-op
Second Year		
0101-301	Financial Accounting	4
0101-302	Managerial Accounting	4
0619-320	Global Standards	4
	Program Concentration	12
1016-319, 320	Data Analysis I, II	10
	HSM Elective	2
	Liberal Arts*	8
0511-211	Principles of Microeconomics	4
0621-499	Cooperative Education	Co-op
Third Year		
0105-363	Principles of Marketing	4
0619-410	Assessment of Service Quality	4
0619-426	Technology in Service Systems	4
0619-480	Human Resources Management	4
	HSM Electives	8
	Liberal Arts*	4

COURSE		QTR. CR. HRS.
	General Education	16
	Free Electives	4
0621-499	Cooperative Education	Co-op
Fourth Year		
0619-470	Leadership Management in Service Culture	4
0619-490	Senior Project	4
	Free Electives	12
	General Education	16
0621-499	Cooperative Education	Co-op
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Concentrations

Students choose one of six concentrations to fit the program to their career interests and goals.

Food management

It takes a wide range of knowledge to manage the daily operations of restaurants (from full-service to cafeteria, quick-service, and special chain operations); hotel fine dining and catering; clubs; and contract services for business, manufacturing, recreation and sports centers, education, health care, retail stores, government agencies, and food vending.

The food management concentration prepares students for management positions through lab experience in Henry's, a full-service, beverage-licensed restaurant. Students learn essential principles and procedures for quality in food production and presentation, sanitation, nutrition, menu planning and merchandising, purchasing, product development, cost control, and service management. In addition, students develop competencies in problem solving and decision making through individual and team-based class projects, computerized exercises, and industry-related activities.

A student chapter of the New York State Restaurant Association fosters the exchange of ideas between professionals working in industry and students. The organization supports professional growth in organizational and social skills, and offers a place for students to network with professionals to make industry contacts. Students in their junior year are encouraged to attend the annual National Restaurant Association show in Chicago.

COURSE		QTR. CR. HRS.
0621-225	Principles of Food Production	4
0621-314	Sanitation and Safety	2
0621-318	Food and Beverage Management	4
0621-331	Restaurant Operations	6
0621-334	Integrated Service Management	4
0621-416	Product Development	4
Total Quarter Credit Hours		**24**

Food marketing and distribution

This concentration prepares graduates for industry positions in food marketing, sales, and distribution and logistics. Graduates are uniquely qualified for positions in an array of food marketing and distribution industries worldwide. In particular, they understand a variety of issues, including food service operations and food marketing, logistics, distribution, and packaging.

COURSE		QTR. CR. HRS.
0621-225	Principles of Food Production	4
0621-315	Food Service Marketing	4
0621-410	Food Processing and Quality Assurance	4
0621-532	International Food Distribution Seminar	4
0607-201	Principles of Packaging	4
0621-432	Packaging for Distribution	4
Total Quarter Credit Hours		**24**

Health systems management

Health care is in the process of undergoing dynamic change in our country and in the global community. A successful health care professional is one with a desire to learn and the ability to adapt to change. This concentration prepares students for entry-level positions in the administrative areas of health care. When combined with another concentration that is more clinically based or hospitality oriented, the health systems management concentration can result in a level of expertise valued by health care systems today.

The concentration features a sequence of three survey courses and three specialized courses. The survey courses introduce the health care field while specialty courses explore topics in more depth. These courses are offered online only.

COURSE		QTR. CR. HRS.
Survey courses:		
0635-310	Survey of Health Care Systems	4
0635-320	Health Care Administration	4
0635-351	Health Care Economics and Finance	4
Specialty courses:		
0635-421	Legal Aspects of Health Care Administration	4
0635-490	Health Care Quality	4
0635-441	Health Planning and Program Development	4
Total Quarter Credit Hours		**24**

Hotel and resort management

This concentration is focused on preparing students for the management and operation of hotel, resort, leisure, and related enterprises. Students will understand the physical characteristics of specific properties and gain the business expertise to manage and market them.

Industry professionals regularly offer their expertise in all of the program's courses. Hospitality and service management students, in conjunction with the general manager of a local Rochester hotel, may enroll in a mentorship program sponsored by the Rochester Hotel Association. This allows students to work closely with executive managers on assigned research projects within a hotel.

Hotel and resort management students evaluate various technologies and service strategies in order to familiarize themselves with the industry's best practices.

COURSE		QTR. CR. HRS.
0622-200	Hotel Operations	4
0622-210	Hotel Marketing and Sales	4
0622-310	Resort Development and Management	4
0622-315	Facilities and Property Management	4
0622-355	Financial Management for the Hospitality Industry	4
0622-420	Hospitality Law	4
Total Quarter Credit Hours		**24**

Human resource management

All organizations share one fundamental concern: how to ensure that their employees are adequately prepared, organized, and managed to support common goals with flexibility.

The human resource management concentration provides students with the tools to recruit the most qualified applicants, help them grow and develop as an organization's needs change, and keep them satisfied enough to stay on the job in this era of frequent turnover. Students also explore the global and legal issues around employment, both to enhance the work force and to avoid the cost of lawsuits.

All students who will be hiring, supervising, or managing in their future careers will benefit from gaining human resource administration competencies.

COURSE		QTR. CR. HRS.
0626-234	Interviewing Techniques	4
0626-428	Training Design and Delivery	4
0626-390	Benefits and Compensation	4
0621-554	International Human Resource Management	4
0626-434	Advanced Human Resource Administration	4
	Related Elective (with adviser approval)	4
Total Quarter Credit Hours		**24**

Travel and tourism management

The growth of modern travel has created many technical challenges for the movement of individuals and groups in a global corporate environment. With that comes the need to consult highly qualified experts to plan, arrange, and coordinate travel. Today more than ever before, travelers are faced with many alternatives for transportation, accommodations, and other travel services and rely increasingly on the travel professional to guide them wisely and honestly. Travel agencies and corporate travel consultants have an important impact on the hospitality and travel economies, including the food service, lodging and leisure, travel and transportation, and meetings and technology industries.

Travel management combines a study of specialized courses in travel management with a sound general education that includes courses in accounting, management, marketing, and business law. The concentration is structured to provide students with a balance of hands-on experience and management theory. This is necessary to further their understanding of why the travel industry operates as it does in its business environment. Students are also versed in the communications technologies that allow them to conduct research via the Internet. This career orientation provides students with a balance of theoretical classroom instruction and experiential opportunities furnished by cooperative education.

Course work prepares students for careers in corporate travel, consulting, and professional meeting management. Employment opportunities are excellent with hotels, resorts, retail travel agencies, major corporations, and other businesses.

COURSE		QTR. CR. HRS.
0623-206	Distribution Systems	4
0623-375	Travel Destinations	4
0623-410	Meeting and Exposition Management	4
0623-418	Corporate Travel Marketing and Planning	4
0623-438	Tourism Planning and Development	4
0622-420	Hospitality Law	4
Total Quarter Credit Hours		**24**

Health Systems Management, Cert.

Program overview

Many students who have completed their associate degree consider entering the health care work force but require an orientation to health systems. These students do not wish to attain a bachelor's degree but rather to enhance their knowledge base about health care. Students who wish to pursue a certificate in health systems administration must have completed their associate degree with a minimum GPA of 2.0. To earn the certificate, students must attain a GPA of 2.5 or higher in the certificate courses. These courses are available only online.

Curriculum

The health systems management certificate program includes six required courses.

Required courses

0635-310	Survey of Healthcare Systems
0635-320	Health Systems Administration
0635-351	Health Care Economics and Finance
0635-421	Legal Aspects of Health Care
0635-431	Health Care Quality Assurance
0635-441	Health Planning and Program Development

Department of Military Science

Reserve Officers' Training Corps (ROTC)—ARMY

www.rit.edu/cast/armyrotc

The Army Reserve Officers' Training Corps prepares students for leadership in a civilian or military career. ROTC is a campus-based program that consists of classroom instruction, physical training, and practical-application laboratories designed to enhance organizational leadership, decision making, and problem-solving skills.

The first two years of ROTC classes are open to all students with the approval of the professor of military science. No military obligation is required unless a student has received an ROTC scholarship or contract. Upon graduation, and the successful completion of Army ROTC, cadets are commissioned as second lieutenants and may serve in the active Army, the Army Reserve, or the Army National Guard. Veterans and members of the Army Reserve or National Guard may be eligible for advanced placement in the program.

Those who join Army ROTC become cadets in a dynamic and challenging program. Throughout the year, the program offers a variety of activities that reinforce leadership skills, teamwork, and confidence. Students have opportunities to participate in high-adventure training weekends on U.S. military installations, where they learn skills such as map reading and land navigation, conducting marksmanship training, and completing the Army confidence course. Students may join the Ranger Challenge Team, an ROTC varsity sport that competes in military skills and physical stamina competitions with other colleges throughout the Northeast. Army ROTC has a chapter of the National Society of

Pershing Rifle, and cadets also conduct community activities and provide color guards for campus, community, and athletic events.

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. Army ROTC awards multi-year scholarships to assist in covering tuition, fees, books, and housing. A four-year ROTC scholarship currently covers tuition and fees, and the average cost for room and board. High school students and enlisted soldiers may apply for Army ROTC scholarships by using the online application process on the Army ROTC website (armyrotc.com). Current college students, if eligible, may apply for campus-based scholarships through the ROTC department.

Basic course

The Army ROTC program is a four-year program divided into two components: the Basic Course and the Advanced Course. The Basic Course occurs during the first two years of the program (normally the freshman and sophomore years) and emphasizes the development of academic and life skills to increase students' potential as future army officers or leaders in tomorrow's dynamic business environment. During the Basic Course, students learn time management and study skills, basic military organization, military customs and courtesies, small-unit leadership, and problem solving. Students who plan to commission through ROTC register for Leadership Lab and Army Conditioning Drills, which fulfills the wellness education credit while meeting the ROTC physical fitness requirements. Students may enroll in Basic Course classes at any time during their first two years of college. Upon completion of the Basic Course, eligible students can progress to the Advanced Course. Eligible Basic Course cadets also can compete to attend off-campus army training opportunities such as Airborne School or Air Assault School. Registration in the basic course requires the permission of the Professor of Military Science.

Advanced course

The Advanced Course is for students entering their last two academic years of college (co-op excluded). The Advanced Course is similar to the Basic Course in organization and style, but its focus is more on organizational leadership, decision-making, and professional skills. Although instruction in military tactics is an integral part of the Advanced Course, it is designed to serve as a vehicle for enabling cadets to apply the full range of leadership skills they are learning in the classroom. Planning, organizing, and leading others through various training activities is emphasized. Upon entering their last year in the program, Advanced Course cadets are ranked against their peers in academics, performance at the Leader Development and Assessment Course (LDAC) (the required ROTC summer program attended between junior and senior year) and general on-campus performance. Based on these factors, the Army makes duty placement and job selections for each cadet. Advanced Course cadets also have the opportunity to participate in a variety of off-campus Army training opportunities such as Army Airborne School, Air Assault School, Northern Warfare, and Mountain Warfare training courses. After completing Advanced Camp, cadets also may participate in the Cadet Troop Leadership Training Program, a paid, practical leadership experience where they are

assigned for up to three weeks to serve as leaders in an active army unit in the United States or elsewhere around the world.

Leader's training course

The Leader's Training Course (LTC) is an option for students who are considering Army ROTC, but have not completed the Basic Course requirements and are entering their last two academic years (co-op excluded). This 28-day course is held at Fort Knox in Kentucky, where students obtain the necessary skills and training to qualify for entry into the last two years of the Army ROTC program. Students learn basic military skills that emphasize leadership development. Those who successfully complete this course are offered the opportunity to formally contract into the Advanced Course for their last two years of college (co-op excluded). Interested students should contact the Army ROTC office.

Veterans

Qualified students with prior military service and members of the Army Reserve or National Guard who have attended Basic Training may enroll directly into the Advanced Course. However, they must have two years of academic work remaining. Those who have more than two years of academic work remaining, but wish to participate in the Army ROTC program, are encouraged to enroll in any of the Basic Course classes. Interested students should visit the department for more information.

Leader development and assessment course

The Advanced Course includes attendance at the ROTC Leader Development and Assessment Course at Fort Lewis, Washington, which normally occurs in the summer between the third and fourth years of college. During this course, Army ROTC cadets from across the nation gather for five weeks to demonstrate their leadership skills and potential. They are repeatedly placed in leadership positions and face problem-solving challenges that bring together all of the classroom and practical instruction they received on campus. Participants might be assigned to lead a 120-person cadet company as they prepare for training or to plan and lead a 10-person squad on a tactical night patrol. Regardless of the task, participants have the opportunity to demonstrate their leadership potential to their army evaluators. Attendees' travel expenses are paid for and students earn a salary for participating in this challenging and greatly rewarding experience.

Department of military science four-year program, typical course sequence

COURSE	QTR. CR. HRS.
First Year	
Introduction to Military Science 0640-201	2
Introduction to Military Leadership 0640-202	2
Introduction to Tactical Leadership 0640-203	2
Second Year	
Military Geography 0640-301	2
Psychology and Leadership 0640-302	2
The Military and American Society 0640-303	2
Survey of American Military History 0640-520	4
Third Year	
Military Tactics 0640-401	3
Military Communications 0640-402	3

COURSE	QTR. CR. HRS.
Military Operations 0640-403	3
Fourth Year	
Army Training Systems 0640-501	3
Military Administration and Logistics Management 0640-502	3
Military Ethics 0640-503	3
Total Quarter Credit Hours	**34**

Please note: A leadership lab (1114-011), which is conducted on a weekly basis for two hours, and Conditioning Drills (1114-010) are an integral part of each course listed in the typical course sequence chart.

Department of military science two-year program, basic camp completion/advanced placement/summer compression, typical course sequence

COURSE	QTR. CR. HRS.
Third Year	
Military Tactics 0640-401	3
Military Communications 0640-402	3
Military Operations 0640-403	3
Survey of American Military History 0640-520	4
Fourth Year	
Army Training Systems 0640-501	3
Military Administration and Logistics Management 0640-502	3
Military Ethics 0640-503	3
Total Quarter Credit Hours	**22**

Please note: A leadership lab (1114-011), which is conducted on a weekly basis for two hours, and Conditioning Drills (1114-010) are an integral part of each course listed on the typical course sequence.

Department of Aerospace Studies—Air Force

Reserve Officer Training Corps (AFROTC)—Air Force

Lt. Col. Mark Avery, Professor of Aerospace Studies

www.rit.edu/cast/afrotc/

Participation in Air Force Reserve Officer Training Corps provides students with a firsthand view of the Air Force while attending college. The program allows students to join the cadet corps and participate in varied activities, including classroom academics, leadership training, base visits, summer professional development, and physical fitness training.

Curriculum

The department of aerospace studies has designed a curriculum that is compatible with the four- and five-year cooperative education plans offered by most of the university's academic programs. The curriculum will develop well-rounded individuals fully prepared to enter into their chosen career fields and become future leaders in the armed forces and society.

Four-year program

The program has three distinct parts: the General Military Course, the Professional Officer Course, and Summer Field Training.

The General Military Course is for students entering the program directly from high school but not later than the sophomore year of college. As freshmen and sophomores, students will study Air Force Doctrine, Mission and Organization, the nature of conflict, and the development and evolution of air and space power.

Every cadet must complete a four-week Summer Field Training Course, offered during the summer between the sophomore and junior years. The field training curriculum includes leadership training, drill and ceremony, officer training, a confidence course, tactical skills, and physical fitness training. Field training evaluates a student's leadership potential and qualifies the cadet for entry into the Professional Officer Course. Cadets who do not complete the entire General Military Course spend an extra week at Field Training completing the academic work from that program.

The Professional Officer Course is an advanced aerospace studies curriculum conducted during the junior and senor years. This curriculum prepares cadets for entry into the Air Force as second lieutenants by teaching them the fundamentals of leadership and management, ethics, staff planning and coordination, national security affairs, and foreign policy.

Leadership and management experience is gained through a series of leadership laboratories, conducted in the fall, winter, and spring quarters throughout the four- and five-year college curricula. The lab is managed by the cadet corps staff with a detachment officer overseeing all activities. Practical command and staff leadership experience, drill and ceremonies, customs and courtesies, and career decision making are all part of the curriculum.

Other programs

Several other programs are offered to cadets. During the academic year cadets have the opportunity to attend Air Force base visits and participate in extracurricular activities such as the drill team or honor guard, or become a member of the Arnold Air Society (a community service organization). Throughout the summer, cadets may also volunteer to attend many professional development programs such as freefall parachute school, Space Orientation, or even shadow Office of Special Investigation (OSI) agents. Opportunities also exist to travel abroad with the international, cultural, and language immersion programs.

Wellness education requirement

The physical training course satisfies the wellness education requirement. Students must be enrolled in AFROTC to participate in the program.

Qualification and selection procedure

To qualify for AFROTC, students must pass the Air Force Officer Qualifying Test, complete an interview, and pass a physical exam and a physical fitness test. Please contact the AFROTC office at (585) 475-5197 for complete details.

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. AFROTC offers multi-year scholarships in technical and nontechnical fields. Competition is selective, and the needs of the Air Force dictate which scholarships will be offered on a yearly basis to college students. High school students can apply online at www.afrotc.com to compete for scholarships through a national board process. Every scholarship cadet and all Professional Officer Course cadets receive a tax-free monthly stipend between $300–$500 and $900 in books.

Minor in military studies and leadership

Students completing the entire four-year AFROTC program may earn a minor in military studies and leadership. Refer to the Minors section of this bulletin for more information.

Department of aerospace studies—AFROTC, typical course sequence*

COURSE	QTR. CR. HRS.
First Year	
Air Force Today I, II, III 0650-210, 211, 212	3
Leadership Lab 1114-002	0
Physical Training 1114-001	0
Second Year	
History of Air Power I, II, III 0519-201, 202, 203	4
Leadership Lab 1114-002	0
Physical Training 1114-001	0
Third Year	
Air Force Leadership and Management I, II 0102-310, 311	10
Leadership Lab 1114-002	0
Physical Training 1114-001	0
Fourth Year	
Leadership Lab 1114-002	0
Physical Training 1114-001	0
Fifth Year	
National Security Affairs I, II 0513-401, 402	9
Leadership Lab 1114-002	0
Physical Training 1114-001	0
Total Quarter Credit Hours	**26**

*NOTE: This course sequence chart is a typical flow, but junior- and senior-level academic courses can be taken in years three and five or years four and five. Five-year AFROTC students enrolled at RIT, but not taking Air Force junior- or senior-level courses, must be enrolled in Leadership Lab and Physical Training.

College of Applied Science and Technology

H. Fred Walker, BS, MBA, California State University; MS, Ph.D., Iowa State University—Dean; Professor

Linda A. Tolan, NCC, CPLP, BS, State University College at Geneseo; MS, Rochester Institute of Technology; Ph.D., Andrews University—Senior Associate Dean, Professor

Maureen S. Valentine, BSCE, Tufts University; MECE, Virginia Polytechnic Institute; PE—Associate Dean; Professor

Sean T. Bennett, BS, Clarkson University; M.Ed., State University College at Brockport; Ed.M., Harvard University—Assistant Dean

School of Engineering Technology

Civil Engineering Technology/ Environmental Management and Safety

Civil Engineering Technology

Amanda Bao, BS, MS, Tianjin University (China); Ph.D., University of Colorado at Boulder—Assistant Professor

Harry G. Cooke, BS, Northwestern University; MSCE, University of Texas; Ph.D., Virginia Polytechnic Institute; PE—Associate Professor

G. Todd Dunn, BS, Dartmouth College; MSCE, University of California; PE—Associate Professor

Robert H. Easton, BS, United States Military Academy; MSCE, Iowa State University; PE—Professor Emeritus

Abdullah Faruque, B.Sc., Bangladesh University of Engineering and Technology; M.A.Sc., University of Windsor (Canada); PE—Assistant Professor

Frank Hanna, B.Sc., M.Sc., University of Baghdad (Iraq); Ph.D., University of Wales College of Cardiff (UK)—Associate Professor

William C. Larsen, BS, MSCE, Dartmouth College; PE—Professor Emeritus

Robert E. McGrath Jr., BCE, Rensselaer Polytechnic Institute; MSCE, Syracuse University; PE—Professor Emeritus

Mark Piterman, MCE, Odessa Marine Engineers Institute (Ukraine)—Professor Emeritus

Scott B. Wolcott, BS, MS, State University of New York at Buffalo; PE—Undergraduate Program Coordinator; Professor

Teresa Wolcott, BS, State University of New York at Buffalo; MS, Rochester Institute of Technology—Lecturer

Environmental Management and Safety

Josh Goldowitz, BS, State University of New York at Binghamton; MS, University of Arizona—Professor

Lisa Greenwood, BS, Rochester Institute of Technology; MS, University of New Haven—Lecturer

John Morelli, BS, Syracuse University; MS, Ph.D., State University of New York College of Environmental Science and Forestry; PE—Department Chair, Professor

Joseph M. Rosenbeck, CSP, MS, BS, Central Missouri State University—Graduate Program Director; Professor

Jennifer L. Schneider, CIH, BA, Roberts Wesleyan College; MS, University of Rochester; Ph.D., University of Massachusetts—Professor

Facility Management

Jeffrey Rogers, PE, CPE, BS, Virginia Polytechnic Institute and State University; MS, University of Florida; ME, Old Dominion University; Ph.D., University of Virginia—Assistant Professor

Electrical, Computer, and Telecommunications Engineering Technology

W. David Baker, BSEE, Monmouth College; MS, Rochester Institute of Technology—Professor Emeritus

Jeanne Christman, BS, Clarkson University; MS, University of Texas at Dallas—Assistant Professor

Richard C. Cliver, BS, Rochester Institute of Technology; MSEE, University of Rochester—Associate Professor

Steven A. Ciccarelli, BS, MS, Rochester Institute of Technology—Electrical Engineering Technology Program Chair; Associate Professor

Thomas Dingman, BS, MS, Rochester Institute of Technology—Professor Emeritus

Michael Eastman, BS, MSCS, Rochester Institute of Technology—Department Chair; Professor

Ronald Fulle, BA, State University College at Oswego; MS, University of Colorado at Boulder—Associate Professor

Chance M. Glenn, BS, University of MD at College Park; MSEE, Ph.D., Johns Hopkins University—Associate Professor

Clark Hochgraf, BS, State University of New York at Buffalo; Ph.D., University of Wisconsin at Madison—Associate Professor

James J. Hurny, BSEE, Carnegie Institute of Technology; MBA, MS, Rochester Institute of Technology—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

Warren L. G. Koontz, BSEE, University of MD; MSEE, Massachusetts Institute of Technology; Ph.D., Purdue University—Professor

David Krispinsky, BE, MSE, Youngstown State University—Associate Professor

Eldred L. Majors, BS, Rochester Institute of Technology—Lecturer

Drew Maywar, BS, MS, Ph.D., University of Rochester—Assistant Professor

Antonio F. Mondragon, BS, Universidad Iberoamericana (Mexico); M.Sc., Universidad Nacional Autonoma de Mexico (Mexico); Ph.D., Texas A&M University—Assistant Professor

David M. Orlicki, BS, Michigan State University; MS, Rochester Institute of Technology; Ph.D., Massachusetts Institute of Technology—Lecturer

Carol Richardson, BSEE, University of Wyoming; MSEE, Union College—Professor Emerita

Jacob Schanker, BEE, MEE, City College of the City University of New York, PE—Lecturer

George H. Zion, BS, MS, Rochester Institute of Technology—Professor

Manufacturing and Mechanical Engineering Technology/Packaging Science

Ronald F. Amberger, BME, Rensselaer Polytechnic Institute; ME, Pennsylvania State University; PE—Professor Emeritus

Dianne M. Amuso, BS, Western New England College; MS, Rensselaer Polytechnic Institute—Lecturer

Scott J. Anson, BSME, MSME, Ph.D., State University of New York at Binghamton; PE—Manufacturing Engineering Technology Program Chair; Associate Professor

Beth A. Carle, BSE, University of Pittsburgh; MS, Ph.D., University of Illinois; EIT Professional Certification—Associate Professor

Mario H. Castro-Cedeno, BSME, MSME, University of Puerto Rico at Mayaguez; MEMS, University of California at Berkeley—Assistant Professor

Elizabeth M. Dell, BSME, General Motors Institute; MS, University of Michigan—Mill Chair; Assistant 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 —Assistant Professor

Martin Gordon, BSME, MSME, MBA, State University of New York at Buffalo; PE—Associate Professor

Christopher M. Greene, BS, Syracuse University; MS, Ph.D., State University of New York at Binghamton—Assistant Professor

Daniel P. Johnson, BS, MS, Rochester Institute of Technology—Department Chair; Professor

Seung H. Kim, BS, Hanyang University (South Korea); MS, Ph.D., University of Illinois—Associate Professor

James H. Lee, BS, California Polytechnic State University; MS, Ph.D., Texas A&M; PE—Assistant Professor

William Leonard, AAS, State University College at Canton; BS, MS, Rochester Institute of Technology—Mechanical Engineering Technology Program Chair; Associate Professor

Ti-Lin Liu, MS, Tsinghua University (China)—Associate Professor

Carl A. Lundgren, BS, Rensselaer Polytechnic Institute; MBA, University of Rochester—Professor

Robert A. Merrill, BS, Clarkson College; MS, Northeastern University; PE—Professor

Michael J. Parthum Sr., BS, MS, Rochester Institute of Technology—Electrical/Mechanical Engineering Technology Program Chair; Associate Professor

S. Manian Ramkumar, BE, PSG, College of Technology-Bharathiar (India); ME, Rochester Institute of Technology; Ph.D., State University of New York at Binghamton —Professor

Michael J. Slifka, AAS, Niagara County Community College; BS, MS, Rochester Institute of Technology—Assistant Professor

John A. Stratton, BS, Rochester Institute of Technology; MS, Rensselaer Polytechnic Institute; PE—Professor Emeritus

Larry A. Villasmil, BSME, Universidad del Tachira (Venezuela); MSME, Ph.D., Texas A&M University—Assistant Professor

Packaging Science

Changfeng Ge, BSME, MSME, Tongji University (China); Ph.D., University of Dortmund (Germany)—Associate Professor

Daniel L. Goodwin, BS, MS, Ph.D., Michigan State University—Professor

Deanna M. Jacobs, BS, State University College at Plattsburgh; MA, State University College at Geneseo; MS, Rochester Institute of Technology—Professor

Thomas Kausch, BS, MS, Rochester Institute of Technology—Instructor

Karen L. Proctor, BS, Michigan State University; MBA, Rochester Institute of Technology—Professor

School of International Hospitality and Service Innovation

Hospitality and Service Management

David H. Crumb, BS, Florida State University; MBA, Michigan State University—Associate Professor

Francis M. Domoy, BS, MA, State University of New York at Buffalo; Ph.D., Michigan State University— Chair Emeritus; Professor

Lorraine E. Hems, BS, Nazareth College of Rochester; CS, CWE—Lecturer

Jon Horne, BA, Colorado State University; MA, University of Phoenix; MS, Rochester Institute of Technology—Assistant Professor

James Jacobs Jr., BA, Purdue University; MS, Troy State University; Ph.D., State University of New York at Buffalo—Senior Lecturer

Richard M. Lagiewski, BS, MS, Rochester Institute of Technology—Senior Lecturer

Warren G. Sackler, BA, Michigan State University; MA, New York University—Associate Professor

Edward A. Steffens, BS, MBA, Rochester Institute of Technology—Associate Professor

Linda Underhill, RD, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York at Buffalo—Interim Chair; Associate Professor

Carol B. Whitlock, RD, BS, MS, Pennsylvania State University; Ph.D., University of Massachusetts— Interim Chair; Professor

Reserve Officer's Training Corps

Army ROTC

Maj. Edward Whitaker, BS, Norwich University; MA, University of MD University College—Professor

First Lt. Nicholas O'Brien, BS, Edinboro University—Assistant Professor

Maj. Donald C. Powell, BA, State University College at Geneseo; MA, State University College at Brockport—Assistant Professor

Maj. Maurice Connelly, BA, Rutgers University—Assistant Professor

Master Sgt. Fernando Crichlow, AS, Coastline Community College—Instructor

Sgt. First Class Dennis Doyle, Training NCO—Instructor

Air Force ROTC

Lt. Col. Mark Avery, BA, University of California at Irvine; MA, Air University—Professor

Capt. Patricia Skutnik, BS, University of MD University College; MA, University of Phoenix—Assistant Professor

Maj. Paul E. Cannon, BS, Roberts Wesleyan College; MA, State University College–Empire State College—Assistant Professor

Distinguished Professorships

Russell C. McCarthy Professorship in Engineering Technology
Established: 1979
Purpose: 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. The purpose of the chair is to build relationships between the college and industrial and professional communities worldwide that share the college's interests, goals, and values.
Held by: Jennifer L. Schneider

Paul A. Miller Professorship in Continuing Education
Established: 1981
Donor: RIT Board of Trustees
Purpose: Established in honor of former RIT President Paul A. Miller, it recognizes RIT faculty making distinguished contributions to continuing education with a record of matching university intellectual and educational resources with the needs of students and the community.
Held by: Betsy Dell

E. Philip Saunders College of Business

Ashok Rao, Dean

saunders.rit.edu

Programs of study

Bachelor of Business Administration in:

*International business requires a co-major. Please see program description for more information.

Success in today's business environment requires leadership and management attuned to rapid changes in technology and increasingly vigorous global competition. The E. Philip 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, the Saunders College offers academic programs comprised of four components: business core courses, a program of study, required liberal arts and sciences courses, and cooperative education experience. The liberal arts and sciences 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.

All students in the Saunders College must complete a set of required business core courses that provide a foundation for their program of study as well as an understanding of all facets of business. These courses serve as a platform for advanced study in a specific area of interest.

The required foundation courses are:
0101-301 Financial Accounting
0101-302 Management Accounting
0102-260 Business 1: Ideas and Creativity
0102-305 Careers in Business
0102-320 Organizational Behavior
0102-438 Business Ethics
0102-530 Managing Innovation and Technology
0102-551 Strategy
0104-350 Corporate Finance
0105-363 Principles of Marketing
0106-401 Operations and Supply Chain Management
0102-265 Business 2: Business Plan Development
0112-270 Business Software Applications
0112-285 Business 3: Commercialization
0113-310 Global Business: An Introduction
0511-211 Principles of Microeconomics
0511-402 Principles of Macroeconomics
0535-352 Professional Communication for Business
1016-226 Calculus for Management Science
1016-319 Data Analysis I
1016-320 Data Analysis II and Lab

Admission requirements

For more information on undergraduate admission, including freshman and transfer admission guidelines, please refer to 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.

Faculty

The college's faculty members are actively involved in applied research and many are consultants to the business community, which enables them to bring real-world experience into the classroom. More than 40 full-time teaching professionals ensure that the educational experience is dynamic and relevant. In the classroom, faculty and students engage in case studies, problem set analyses, experiential exercises, lectures, group discussions, and team presentations.

Facilities and resources

RIT is a national leader when it comes to incorporating computer technology into the classroom. Saunders College students have access to extensive resources and utilize the same business software used by Fortune 100 companies worldwide. The college's classrooms and study areas feature wireless access.

Cooperative education

Cooperative education is an integral part of the college's curriculum. Students obtain paid, practical work experience in an area related to their chosen field of interest. Co-op is part of each student's career exploration and helps relate their classroom studies to the world of business.

Students are required to successfully complete two quarters of cooperative education. These work blocks take place during the junior or senior year. While RIT and the Saunders College cannot guarantee cooperative education placement, the Office of Cooperative Education and Career Services is a valuable resource in assisting students in their co-op and job search efforts.

Accreditation

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

Advising

The college's Student Services Office offers students administrative support to assist with course selection and registration, career guidance, student records, and course scheduling. In addition, the administrative staff provides students with information on additional support services within RIT. Students are assigned an individual faculty adviser, who becomes an integral part of their advising network.

Academic enrichment

Honors Program: Students who demonstrate a high level of achievement at the high school level may be invited to join the Honors program. These students will participate in Honors course work throughout their program of study and experiential learning activities under the guidance of a faculty mentor. Honors students will be selected during the admission process.

Study Abroad: RIT encourages all students to consider a study abroad program to enhance their understanding of global business and other cultures. Students may study full time at a variety of host schools and are able to select both business and liberal arts classes. The Study Abroad Office has information about foreign study options and opportunities. All business majors may request a study abroad experience to replace one of their required cooperative education work blocks.

Minors: Students may choose from more than 95 minors to enhance their academic program or further develop a personal area of interest. For a detailed list of minors, including courses, please refer to the Minors section of this bulletin.

Special opportunities

Accelerated dual degree option: Undergraduate business students may consider the 4+1 MBA program, an accelerated dual degree program that allows students to complete both the BS and MBA degrees in five years. Please refer to the *Graduate Bulletin* or the college's website for more information.

Graduate study: The college offers the following graduate degree programs: master of business administration, executive MBA, online executive MBA, master of business administration–accounting (which meets the New York state education requirements for CPA examination candidacy), master of science in finance, master of science in management, and master of science in innovation management. Please refer to the *Graduate Bulletin* or the college's website for more information.

Accounting, BS

http://saunders.rit.edu/undergraduate/accounting/index.php

Program overview

The accounting program provides broad exposure to the liberal arts as well as science and management concepts. Beyond this core, students choose an option that best fits their career interests. Students planning a career in public accounting may select undergraduate course work preparing them to enter RIT's MBA-accounting program. Completion of both the BS and MBA-accounting degrees satisfies the New York state CPA education requirements (see electives). Students may tailor the program to meet diverse career opportunities in the commercial, government, and not-for-profit sectors.

Curriculum

Accounting, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1720-051, 052	Discovery/Pathways	2
0102-260	Business 1: Ideas and Creativity	4
0102-265	Business 2: Business Plan Development	2
0112-270	Business Software Applications	2
0112-285	Business 3: Commercialization	2
0511-211	Principles of Microeconomics	4
0511-402	Principles of Macroeconomics	4
0535-352	Professional Communication for Business	4

COURSE		QTR. CR. HRS.
1016-226	Calculus for Management Science	4
1016-319, 320	Data Analysis I, II	10
	Liberal Arts*	12
	Wellness Education†	0
Second Year		
0101-301, 302	Financial and Management Accounting	8
0101-345	Accounting Information Systems	4
0102-305	Careers in Business	1
0113-310	Global Business: An Introduction	4
0104-350	Corporate Finance	4
0110-319	Legal Environment of Business	4
	Liberal Arts*	12
	General Education	8
	Laboratory Sciences	8
Third Year		
0101-408	Financial Reporting and Analysis I	4
0101-409	Financial Reporting and Analysis II	4
0101-522	Personal and Small Business Taxation	4
0102-320	Organizational Behavior	4
0102-438	Business Ethics	4
0105-363	Principles of Marketing	4
	Liberal Arts*	12
	Free Electives	8
	Cooperative Education†	Co-op
Fourth Year		
0101-550	Financial Accounting and Reporting Issues	4
0102-551	Strategy	4
0106-401	Operations and Supply Chain Management	4
0104-452	Managing Corporate Assets and Liabilities	4
0101-431	Cost Accounting	4
0102-530	Managing Innovation and Technology	4
	Free Elective	4
	General Education	8
Total Quarter Credit Hours		**183**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
† Two quarters of cooperative education are required and must be completed within the third and fourth years.

Electives

The program contains four free electives. Students planning to pursue an MBA-accounting degree and a career in public accounting should take the following electives:

0101-523	Advanced Taxation	
0101-530	Auditing	
0101-540	Advanced Accounting	
0110-320	Commercial Law	

For students seeking careers outside of public accounting, the following recommendations suggest ways in which electives may benefit additional career goals:
- Obtain a minor in management information systems.
- Select electives and other course work to strengthen communication skills and prepare for a legal co-op and/or law school, with corporate law as a career goal.
- Complete electives in accounting, business, and the liberal arts to prepare for a career in government service.

Finance, BS

http://saunders.rit.edu/undergraduate/finance/index.php

Program overview

The finance program prepares students for management positions in financial, commercial, industrial, and governmental organizations. Students are taught the principles of financial decision making and build an understanding of the economic, legal, and financial environment in which they will operate. Career options exist in government, industry, service, and not-for-profit organizations.

Curriculum

Finance, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1720-051, 052	Discovery/Pathways	2
0102-260	Business 1: Ideas and Creativity	4
0102-265	Business 2: Business Plan Development	2
0112-270	Business Software Applications	2
0112-285	Business 3: Commercialization	2
0511-211	Principles of Microeconomics	4
0511-402	Principles of Macroeconomics	4
0535-352	Professional Communication for Business	4
1016-226	Calculus for Management Science	4
1016-319, 320	Data Analysis I, II	10
	Liberal Arts*	12
	Wellness Education†	0
Second Year		
0101-301, 302	Financial and Management Accounting	8
0102-305	Careers in Business	1
0113-310	Global Business: An Introduction	4
0104-350	Corporate Finance	4
0110-319	Legal Environment of Business	4
	Liberal Arts*	12
	Free Electives	8
	General Education	4
	Laboratory Sciences	8
Third Year		
0102-320	Organizational Behavior	4
0102-438	Business Ethics	4
0104-452	Managing Corporate Assets and Liabilities	4
0104-453	Intermediate Investments	4
0105-363	Principles of Marketing	4
	Liberal Arts*	12
	Free Elective	4
	General Education	4
	Cooperative Education‡	Co-op
Fourth Year		
0102-551	Strategy	4
0104-460	Financial Analysis and Modeling	4
	Finance Electives	8
0104-504	Finance in a Global Environment	4
0106-401	Operations and Supply Chain Management	4
0102-530	Managing Innovation and Technology	4
	Free Electives	4
	General Education	8
Total Quarter Credit Hours		**183**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Two quarters of cooperative education are required and must be completed within the third and fourth years.

International Business, BS

http://saunders.rit.edu/undergraduate/international_business/index.php

Program overview

Students in the international business program develop the foundation necessary to understand business as well as political and cultural diversity. Proficiency in a foreign language is an integral part of the program. A co-major is chosen in one of the following areas: accounting, finance, management, management information systems, or marketing. The co-major provides students with the functional tools needed in their career.

International business positions include substantial personal and professional benefits. Overseas assignments typically bring long hours and hard work, yet the reward of upward mobility within the corporate world continues to lure young executives to global assignments.

Curriculum

International business, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1720-051, 052	Discovery/Pathways	2
0102-260	Business 1: Ideas and Creativity	4
0102-265	Business 2: Business Plan Development	2
0112-270	Business Software Applications	2
0112-285	Business 3: Commercialization	2
0511-211	Principles of Microeconomics	4
0511-402	Principles of Macroeconomics	4
0535-352	Professional Communication for Business	4
1016-226	Calculus for Management Science	4
1016-319, 320	Data Analysis I, II	10
	Liberal Arts*	12
	Wellness Education†	0
Second Year		
0101-301, 302	Financial and Management Accounting	8
0102-305	Careers in Business	1
0113-310	Global Business: An Introduction	4
0104-350	Corporate Finance	4
0105-363	Principles of Marketing	4
	Foreign Language§	12
	Liberal Arts*	12
	Laboratory Sciences	8
Third Year		
0102-320	Organizational Behavior	4
0102-438	Business Ethics	4
	Co-major Courses	8
	Liberal Arts*	12
	Choose three of the following:	12
0113-400	Managing in the Global Environment	
0113-430	Global Business: Special Issues	
0104-504	Finance in a Global Environment	
0113-450	Marketing in the Global Environment	
	Cooperative Education‡	Co-op
Fourth Year		
0113-500	Strategy in the Global Environment	4
0102-551	Strategy	4
0106-401	Operations and Supply Chain Management	4
0102-530	Managing Innovation and Technology	4

COURSE		QTR. CR. HRS.
	Co-major Courses	8
	Free Electives	8
	General Education	4
	Choose one of the following:	4
0102-507	Business, Government, and Society	
0110-319	Legal Environment of Business	
Total Quarter Credit Hours		**183**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Two quarters of cooperative education are required and must be completed within the third and fourth years.
§ Language credit may be used as liberal arts upper-division credit.

Additional Information

Foreign langage requirement

Fluency in a foreign language offered by RIT is a requirement of the program and can be met with the satisfactory completion of three quarters of language instruction or by passing a language department examination. It is strongly recommended that students take an additional three quarters of instruction in their language of choice. Entering students with fluency in one foreign language are encouraged to take at least three quarters of instruction in a second language.

Management, BS

http://saunders.rit.edu/undergraduate/management/index.php

Program overview

The management program prepares students for management and specialist careers in a variety of enterprises and organizations. Through this focused area of study, students develop the skills and concepts needed to become effective leaders, ethical decision makers, and creative innovators. The management curriculum provides both depth and flexibility in its offerings so that students can maximize their educational experience.

Curriculum

Management, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1720-051, 052	Discovery/Pathways	2
0102-260	Business 1: Ideas and Creativity	4
0102-265	Business 2: Business Plan Development	2
0112-270	Business Software Applications	2
0112-285	Business 3: Commercialization	2
0511-211	Principles of Microeconomics	4
0511-402	Principles of Macroeconomics	4
0535-352	Professional Communication for Business	4
1016-226	Calculus for Management Science	4
1016-319, 320	Data Analysis I, II	10
	Liberal Arts*	12
	Wellness Education†	0
Second Year		
0101-301, 302	Financial and Management Accounting	8
0102-305	Careers in Business	1
0113-310	Global Business: An Introduction	4
0104-350	Corporate Finance	4

COURSE		QTR. CR. HRS.
0105-363	Principles of Marketing	4
	Liberal Arts*	12
	Free Electives	8
	General Education	4
	Laboratory Sciences	8
Third Year		
0102-320	Organizational Behavior	4
0102-438	Business Ethics	4
0102-455	Human Resource Management	4
0102-490	Entrepreneurship	4
	Liberal Arts*	12
	Free Elective	4
	General Education	8
	Cooperative Education‡	Co-op
Fourth Year		
0102-460	Leadership in Organizations	4
0102-530	Managing Innovation and Technology	4
0102-507	Business, Government, and Society	4
0102-551	Strategy	4
0106-401	Operations and Supply Chain Management	4
	Management Elective	8
	Free Electives	8
	General Education	4
Total Quarter Credit Hours		**183**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Two quarters of cooperative education are required and must be completed within the third and fourth years.

Management Information Systems, BS

http://saunders.rit.edu/undergraduate/mis/index.php

Program overview

The management information systems program prepares students for careers involving leading-edge enterprise technologies and the analysis, design, and management of computer-based information systems. The curriculum provides students with the opportunity to analyze existing business processes and learn to utilize digital technologies to improve and/or design new models.

As a result of the program, students are able to apply the concepts of enterprise resource planning and work with sophisticated enterprise systems to help companies achieve their goals. Students also are able to design systems that are usable, practical, and cost-effective. Major career directions for graduates include business analysis, enterprise resource planning analysis and consulting, database application development and administration, network design and administration, website development and administration, and the management of information systems projects.

Curriculum

Management information systems, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1720-051, 052	Discovery/Pathways	2
0102-260	Business 1: Ideas and Creativity	4
0102-265	Business 2: Business Plan Development	2
0112-270	Business Software Applications	2
0112-285	Business 3: Commercialization	2
0511-211	Principles of Microeconomics	4
0511-402	Principles of Macroeconomics	4
0535-352	Professional Communication for Business	4
1016-226	Calculus for Management Science	4
1016-319, 320	Data Analysis I, II	10
	Liberal Arts*	12
	Wellness Education†	0
Second Year		
0101-301,302	Financial and Management Accounting	8
0102-305	Careers in Business	1
0113-310	Global Business: An Introduction	4
0104-350	Corporate Finance	4
0105-363	Principles of Marketing	4
0112-331	Developing Business Applications	4
0112-340	Database Management Systems	4
0112-370	Systems Analysis and Design	4
	Liberal Arts*	12
	Laboratory Sciences	8
Third Year		
0102-320	Organizational Behavior	4
0102-438	Business Ethics	4
0110-319	Legal Environment of Business	4
0112-390	Emerging Business Technologies	4
	Liberal Arts*	12
	Free Electives	8
	General Education	4
	Cooperative Education‡	Co-op
Fourth Year		
0102-551	Strategy	4
0106-401	Operations and Supply Chain Management	4
0112-525	MIS Capstone	4
0102-530	Managing Innovation and Technology	4
	MIS Elective	8
	Free Electives	4
	General Education	12
Total Quarter Credit Hours		**183**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Two quarters of cooperative education are required and must be completed within the third and fourth years.

Marketing, BS

http://saunders.rit.edu/undergraduate/marketing/index.php

Program overview

Marketing has long been recognized as 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. These marketing basics apply to governmental agencies, not-for-profit organizations, service organizations, and for-profit firms.

In the marketing program, students learn theory and gain practical experience by creating tactically enabled strategic marketing plans. Through projects, they learn to work independently and in teams to achieve organizational objectives. Marketing majors develop leadership and communication skills through classroom experiences and their work on real and simulated business challenges. Upon completing the program, students have gained proficiency in analyzing and understanding buyers, developed and

delivered professional sales presentations, and designed and implemented marketing research projects. Students graduate with the ability to create and critically evaluate strategic marketing plans.

Curriculum

Marketing, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1720-051, 052	Discovery/Pathways	2
0102-260	Business 1: Ideas and Creativity	4
0102-265	Business 2: Business Plan Development	2
0112-270	Business Software Applications	2
0112-285	Business 3: Commercialization	2
0511-211	Principles of Microeconomics	4
0511-402	Principles of Macroeconomics	4
0535-352	Professional Communication for Business	4
1016-226	Calculus for Management Science	4
1016-319, 320	Data Analysis I, II	10
	Liberal Arts*	12
	Wellness Education†	0
Second Year		
0101-301, 302	Financial and Management Accounting	8
0102-305	Careers in Business	1
0113-310	Global Business: An Introduction	4
0104-350	Corporate Finance	4
0105-363	Principles of Marketing	4
	Liberal Arts*	12
	Free Elective	4
	General Education	8
	Laboratory Sciences	8
Third Year		
0102-320	Organizational Behavior	4
0105-505	Buyer Behavior	4
0105-559	Professional Selling	4
	Marketing Elective	8
	Liberal Arts*	12
	General Education	8
	Cooperative Education‡	Co-op
Fourth Year		
0102-438	Business Ethics	4
0102-507	Business, Government, and Society	4
0102-551	Strategy	4
0105-551	Marketing Metrics and Research	4
0106-401	Operations and Supply Chain Management	4
0102-530	Managing Innovation and Technology	4
0105-550	Marketing Management	4
	Free Electives	12
Total Quarter Credit Hours		**183**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Two quarters of cooperative education are required and must be completed within the third and fourth years.

New Media Marketing, BS

http://saunders.rit.edu/undergraduate/new_media_marketing/index.php

Program overview

The new media marketing program is an interdisciplinary major with a curriculum that covers marketing, imaging, graphic arts, information systems, and management. The program provides an overall assessment of the current and future state of the graphic communication industry and was designed to meet the industry's need for broadly educated marketing, new media, and management professionals. This is a joint program between the Saunders College and the College of Imaging Arts and Sciences.

Curriculum

New media marketing, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1720-051, 052	Discovery/Pathways	2
0102-260	Business 1: Ideas and Creativity	4
0102-265	Business 2: Business Plan Development	2
0112-270	Business Software Applications	2
0112-285	Business 3: Commercialization	2
0511-211	Principles of Microeconomics	4
0511-402	Principles of Macroeconomics	4
0535-352	Professional Communication for Business	4
1016-226	Calculus for Management Science	4
1016-319, 320	Data Analysis I, II	10
	New Media Elective	4
	Liberal Arts*	8
	Wellness Education†	0
Second Year		
0101-301, 302	Financial and Management Accounting	8
0102-305	Careers in Business	1
0113-310	Global Business: An Introduction	4
0104-350	Corporate Finance	4
0105-363	Principles of Marketing	4
	New Media Electives	8
	Liberal Arts*	16
	Laboratory Sciences	8
Third Year		
0102-320	Organizational Behavior	4
0102-438	Business Ethics	4
0105-440	Internet Marketing	4
0105-442	Search Engine Marketing and Analytics	4
	Business/Media Electives	4
	Liberal Arts*	12
	General Education	4
	Cooperative Education‡	Co-op
Fourth Year		
0102-507	Business, Government, and Society	4
0102-551	Strategy	4
0105-520	Advanced Internet Marketing	4
0106-401	Operations and Supply Chain Management	4
0102-530	Managing Innovation and Technology	4
	Free Electives	12
	General Education	12
Total Quarter Credit Hours		**183**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Two quarters of cooperative education are required and must be completed within the third and fourth years.

Business, Undeclared

Program overview

If students' interests fall into the business realm, but they are unclear which program of study to choose from, the undeclared business option is a good place to begin. By building on the liberal arts and sciences and business core components, the undeclared business option provides students up to a year and a half to declare a major. During this time, students complete required courses (including liberal arts courses) that provide an understanding of all facets of business and serve as a foundation for the undeclared option as well as advanced study in a specific area of interest. Advisers are available to assist students in selecting a major that matches their area of interest.

E. Philip Saunders College of Business

Ashok Rao, B.Tech., Indian Institute of Technology; MS, Ph.D., University of Iowa—Dean

Donald O. Wilson, BS, Oklahoma State University; MS, MPA, University of Southern California; Ph.D., University of California at Irvine—Associate Dean for Teaching and Curriculum; Director, EMBA Program

Accounting

Mithu Dey, BBA, Howard University; MBA, Ph.D., George Washington University; CPA, Maryland—Assistant Professor

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

William T. Evans, BS, Rensselaer Polytechnic Institute; MBA, University of Rochester—Senior Lecturer

Roberta L. Klein, BS, State University College at Brockport; MBA, Rochester Institute of Technology; CPA, New York—Lecturer

Bruce L. Oliver, BBA, MBA, University of Cincinnati; Ph.D., University of Washington—Professor

Qian Song, B.Sc., M.Sc., Qingdao University; Ph.D., Washington State University—Assistant Professor

Daniel D. Tessoni, BBA, St. John Fisher College; MS, Clarkson College of Technology; Ph.D., Syracuse University; CPA, New York—Benjamin Forman Chair for Teaching Excellence; Assistant Professor

Decision Sciences

John Angelis, BE, Youngstown State University; Ph.D., Case Western Reserve University—Assistant Professor

John E. Ettlie, BS, MS, Ph.D., Northwestern University—Benjamin Forman Chair for Research; Professor

A. Erhan Mergen, BS, Middle East Technical University (Turkey); MS, Ph.D., Union College—Professor

Brian F. O'Neil, BS, Syracuse University; MS, Ph.D., Purdue University—Distinguished Lecturer

William J. Stevenson, BSIE, MBA, Ph.D., Syracuse University—Associate Professor

Finance

Steven C. Gold, BA, BS, Rutgers University; MA, Ph.D., State University of New York at Binghamton—Professor

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

Jeffrey P. Lessard, BA, BS, University of New Hampshire; MBA, Plymouth State College; MA, Ph.D., University of Arkansas—Associate Professor

Ashok J. Robin, B.Com, University of Madras (India); MBA, Ph.D., State University of New York at Buffalo—Madelon and Richard Rosett Chair for Research; Professor

Patricia L. Wollan, BS, York University; MBA, Old Dominion University; Ph.D., Pennsylvania State University—Lecturer

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

Management and International Business

Robert J. Barbato, BA, LeMoyne College; Ph.D., Michigan State University—Professor

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

A. Clyde Hull, BA, Yale University; MB, MBA, Ph.D., Indiana University—Associate Professor

Shalini Khazanchi, BS, South Gujarat University (India); MBA, University of Pune (India); Ph.D., University of Cincinnati—Associate Professor

Martin Lawlor, BA, State University of New York at Buffalo; MBA, Rochester Institute of Technology—Director, Online EMBA; Lecturer

Steven Luxmore, BA, MA, University of Guelph (Canada); Ph.D.; University of Toronto (Canada)—Assistant Professor

Joy Oguntebi, BS, Georgia Institute of Technology; MS, University of Michigan; Ph.D., University of Michigan—Assistant Professor

Michael E. Palanski, BS, Grove City College; MA, Covenant Theological Studies; Ph.D., State University of New York at Binghamton—Assistant Professor

Ashok Rao, B.Tech., Indian Institute of Technology; MS, Ph.D., University of Iowa—Dean

Sandra L. Rothenberg, BS, Syracuse University; MS, Ph.D., Massachusetts Institute of Technology—Director, Institute for Business Ethics and Corporate Social Responsibility; Associate Professor

Delmonize Smith, BBA, Faulkner University; MS, Troy University; Ph.D., University of Alabama—Assistant Professor

Zhi Tang, BA, Shandorun University; MA, Fudon University (China); Ph.D., University of Alabama—Assistant Professor

Donald O. Wilson, BS, Oklahoma State University; MS, MPA, University of Southern California; Ph.D., University of California at Irvine—Associate Dean for Teaching and Curriculum; Director; EMBA Program; Assistant Professor

Management Information Systems

A. James Baroody, BS, University of Richmond; MS, College of William and Mary; MS, Ph.D., University of Wisconsin at Madison—Distinguished Lecturer

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

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

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

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

Marketing

Robert B. Boehner, BA, MA, Siena College; JD, University of North Carolina at Chapel Hill—Senior Lecturer

Adriana M. Boveda-Lambie, BS, University of Maryland at College Park; MA, University of Texas at Austin; Ph.D., University of Rhode Island—Assistant Professor

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

Neil Hair, BS, University of Wales (U.K.); MS, Sheffield Hallam University (U.K.); Ph.D., Cranfield University—Associate Professor

Joseph C. Miller, BA, Grand Valley State University; MBA, Wayne State University; Ph.D., Michigan State University—Assistant Professor

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

John D. Ward, BS, Georgia Institute of Technology; MS, Purdue University—Lecturer

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: open

Madelon and Richard Rosett Chair
Established: 2000
Donor: Madelon and Richard Rosett
Purpose: To support a professorship of a nationally prominent scholar in any field of business
Held by: Ashok Robin

B. Thomas Golisano College of Computing and Information Sciences

Andrew L. Sears, Dean

www.gccis.rit.edu

Programs of study

Bachelor of Science degrees in:

The B. Thomas Golisano College of Computing and Information Sciences is one of the largest colleges at RIT and has become one of the most comprehensive computing colleges in the United States. The college offers 17 bachelor's, master's, and doctorate degree programs in computing.

Since the college was established in 2001, more than 5,000 students have graduated with undergraduate and graduate degrees. The college's programs address the growing need for experts in the fields of computing. With more than 100 faculty, 3,000 students, 40 technical and support staff, and state-of-the art facilities dedicated to learning, teaching, research, and development, the college has quickly risen in recognition around the country.

Admission requirements

For more information on undergraduate admission, including freshman and transfer admission guidelines, please see 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.

Faculty

The college's faculty is a dedicated group of teacher-scholars and scholar-teachers, performing use-inspired research with an emphasis on student involvement and career preparation. Faculty members provide leadership by implementing innovative teaching techniques while anticipating and meeting the needs of students and our industrial partners. Many have significant industrial experience in addition to outstanding academic credentials.

Facilities

The highly technical nature of our programs demands cutting-edge, state-of-the art facilities and equipment. The college prides itself on offering the very best to support students' success. The Golisano building is equipped with more than 2,000 workstations housed in 56 labs, studio labs, and classrooms, all with the latest technology.

Each academic unit has extensive laboratories dedicated to undergraduate education. These labs contain powerful PCs and workstations as well as appropriate, up-to-date software. The labs are available to students 16–18 hours a day, except during designated class times. High-speed Internet access, along with a wireless network, is available to ensure our students have the tools necessary to complete their assignments and projects.

A 126,500-square-foot wireless building houses the college's specialized labs, such as those dedicated to wireless networking, security, entertainment technology, AI, streaming media, Honors, and computer vision, as well as academic units, faculty offices, classrooms, and study and lounge space. The proximity of the college's units and labs encourages joint projects as well as interaction among students in different programs outside the college.

Accreditation

The bachelor of science degree programs in computer science, information technology, software engineering, and applied networking and system administration are fully accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700.

Cooperative education

All programs in the Golisano College have a cooperative education requirement. Co-op generally starts after completing two years of the program and ends so that the last quarter attended is in residence. Co-ops may be one or two quarters in length and at any company that satisfies the program's requirements. Please refer to each program for specific information regarding cooperative education requirements. Academic advisers also can provide students with information concerning the co-op experience.

Advising

As part of its commitment to student success, the Golisano College provides both academic advising and career counseling. Students have access to their program chairperson, a faculty adviser, a full-time academic adviser, the academic advising office in the College of Liberal Arts, and program coordinators from the Office of Cooperative Education and Career Services. In addition, office staff provide support for registration and help with records and scheduling. Part-time and evening students can arrange for these services at night by appointment.

Academic enrichment

Honors Program: Students who demonstrate a high level of achievement at the high school level may be invited to join the Honors program. These students will participate in Honors course work throughout their program of study and experiential learning activities under the guidance of a faculty mentor. Honors students will be selected during the admissions process.

Study Abroad: RIT encourages all students to consider a study abroad program. Students may study full time at a variety of host schools and are able to select courses that fulfill requirements in their academic field of study and/or liberal arts general education requirements. The Study Abroad Office has information about foreign study options and opportunities.

Minors: RIT offers students more than 95 minors to choose from to enhance their academic program or further develop a personal area of interest. For a detailed list of minors, including courses, please refer to the Minors section of this bulletin.

Special opportunities

Accelerated dual degree option: Some programs offer accelerated, five-year dual BS/MS degree options. These degrees offer students the opportunity to earn a bachelor's degree and a master's degree in less time than pursuing each degree individually. Please refer to individual programs, the *Graduate Bulletin,* or the college's website for more information.

Double majors: The college offers a number of double majors to assist students in obtaining two areas of expertise. Please refer to individual programs or the college's website for more information.

Graduate study: The college offers a doctorate program in computing and information sciences; master of science degrees in computer science, computer security and information assurance, game design and development, human-computer interaction, information technology, medical informatics, networking and system administration, and software engineering; and advanced certificates in information assurance, interactive multimedia development, network planning and design, and networking and systems administration. Please refer to the *Graduate Bulletin* or the college's website for more information.

Department of Computer Science

Computer Science, BS

http://www.cs.rit.edu/

Paul T. Tymann, Chair
(585) 475-7908, ptt@cs.rit.edu

Program overview

The computer science program attracts students who are interested in both the mathematical theory and technical applications of computer science. Most employers look for students who not only are good computer scientists but also understand the tools and techniques of mathematics, science, and industry and are able to communicate effectively. The BS program is for the mathematically adept student who wishes to become a computing professional with knowledge of relevant applications areas. The program also is attractive to students transferring to RIT with an associate degree in computer science and course work in mathematics and science.

The demands of industry and government require college graduates to master both the fundamentals and the applied aspects of their profession. To meet this requirement, two applied educational experiences are woven into the program. Students are required to complete a cooperative educational experience as well as an extensive set of laboratory and small-group experiences, many as members of a team. These activities are typically held in a setting involving 15 to 20 students each, providing a venue for significant student-faculty interaction.

Computer science covers a wide spectrum of areas within the field of computing, ranging from the theoretical to the practical. A computer scientist can specialize in areas such as artificial intelligence, computer graphics, computer theory, networking, security, robotics, parallel computation, database, data mining, computer architecture, or systems software. Programming is necessary, but computer scientists also must be adaptable as well as adept at problem solving and analytical reasoning, able to understand design principles, and fluent in using computers.

An undergraduate computer science student takes a core of computer science courses that provide a solid foundation for advanced work. Building on this base, students can explore a variety of specializations in their third, fourth, and fifth years. In addition, students have the opportunity to develop a broad appreciation of computer applications and the effects of computers on society via

computer science electives, liberal arts courses, and various electives, which can be used to complete minors, if so desired.

Accreditation

The BS degree in computer science is accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700.

Curriculum

Computer science, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
4003-241	Problem-Based Introduction to Computer Science	4
4003-242	Data Structures for Problem Solving	4
4003-243	Object-Oriented Programming	4
1016-281, 282, 283	Calculus I, II, III	12
1016-265, 366	Discrete Mathematics I, II	8
	Liberal Arts*	16
1720-051, 052	First-Year Enrichment I, II	2
	Wellness Education†	0
Second Year		
4003-334	Computer Science 4	4
4010-361	Software Engineering	4
4003-341	Professional Communications	4
4003-345	Computer Organization	4
1016-351	Probability	4
	Lab Science‡	12
	Liberal Arts*	12
	Free Elective**	4
	Wellness Education†	0
Third, Fourth, and Fifth Years		
4003-380	Introduction to Computer Science Theory	4
4003-440	Operating Systems I	4
4003-420	Data Communications and Networks I	4
4003-450	Programming Language Concepts	4
	Computer Science-Related Electives††	8
	Computer Science Electives	16
	Related Electives§	12
	Liberal Arts*	24
	Science Electives‡	8
	Free Electives**	8
	Cooperative Education (four quarters required)	Co-op
Total Quarter Credit Hours		**190**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Students complete a lab science sequence by selecting University Physics (1017-311, 312, 313), General and Analytical Chemistry (1011-215, 216, 217, 205, 206, 227), or General Biology (1001-201, 202, 203, 205, 206, 207). 4003-241, 4003-242, 4003-243 replaced the previous sequence of 4003-231, 232, 233. (If a lab science sequence calls for more than 12 quarter credit hours, then science electives are reduced by the corresponding amount.)
§ Related electives may be chosen from any discipline other than computer science or software engineering.
** Any course open to computer science majors may be taken as a free elective subject to restrictions published in the Undergraduate Advising Handbook.
†† The computer science-related electives requirement states that at least two courses are related according to department definitions. The general areas from which related electives may be selected are systems programming, data communications and networks, parallel computing, digital systems design, computer science theory, software engineering, computer graphics, and artificial intelligence. The computer science Undergraduate Advising Handbook has a complete list.

Evening program

The BS program may be taken on a part-time basis during evening hours. The typical evening student requires approximately 25 quarters for a BS degree (this assumes no previous course work). Students with a strong associate degree in computer science can complete the BS degree requirements in approximately 13 quarters.

Computer science, BS degree, evening program, typical course sequence

COURSE		QTR. CR. HRS.
Computer Science		
4003-241	Problem-Based Introduction to Computer Science	4
4003-242	Data Structures for Problem Solving	4
4003-243	Object-Oriented Programming	4
4003-334	Computer Science 4	4
4003-341	Professional Communications	4
4010-361	Software Engineering	4
4003-345	Computer Organization	4
4003-380	Introduction to CS Theory	4
4003-450	Programming Language Concepts	4
4003-420	Data Communications and Networks I	4
4003-440	Operating Systems I	4
	Computer Science-Related Electives‡	8
	Computer Science Electives	16
Liberal Arts		
	Liberal Arts*	52
Mathematics and Science		
1016-281, 282, 283	Calculus I, II, III	12
1016-351	Probability	4
1016-265, 366	Discrete Mathematics I, II	8
	Science Electives **	8
	Choose one science sequence§	12
1017-311, 312, 313	University Physics	
1011-215, 216, 217, 205, 206, 227	General and Analytical Chemistry I, II, III	
1001-201, 202, 203, 205, 206, 207	General Biology	
Other		
1720-051, 052	First-Year Experience I, II	2
	Wellness Education†	0
	Free Electives	12
	Related Electives	12
	Cooperative Education (four quarters required)	Co-op
Total Quarter Credit Hours		**190**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ The computer science-related electives requirement states that at least two courses must be related according to department definitions. The general areas from which related electives may be selected are systems programming, data communications and networks, parallel computing, digital systems design, computer science theory, software engineering, computer graphics, and artificial intelligence. The computer science Undergraduate Advising Handbook has a complete list.
§ Related electives may be chosen from any discipline other than computer science or software engineering. If a lab science calls for more than 12 quarter credit hours, then science electives are reduced by the corresponding amount.

Information Technology, BS

http://www.ist.rit.edu/

Jeffrey A. Lasky, Chair
(585) 475-2284, Jeffrey.Lasky@rit.edu

Program overview

The role of an IT professional, or information technologist, is diverse and multifaceted. To develop and maintain truly effective systems, information technologists need core competencies in four essential areas: Web design/development and interactive media; database, programming, and application development; networking and system administration, which includes the design, deployment, and security of computing infrastructure; and technology integration and deployment in user communities, including needs assessment, user-centered design, technology transfer, and ongoing support.

The fourth competency area is the defining expertise for information technology professionals. To design and develop the best possible systems, IT professionals must see the world through the users' eyes and learn about what user communities need to contribute to organizational goals and success. This requires skills in information gathering, user-centered design, and effective deployment practices in organizations with differing user environments and cultures, as well as strong communication and people skills.

Curriculum

The core competencies provide a foundation for developing greater depth in specialized concentration areas. Students will choose two concentrations from the following: Web development, database technology, interactive multimedia development, network and system administration, learning and performance technology, medical informatics, and advanced application development. In addition, with department permission, students can create a special-topics sequence for one of their two concentrations. Most students select advanced technical courses for developing a deep competency in one or two of the specialization areas. Other students choose a broader path to prepare for general IT practitioner jobs, which are prevalent in virtually every enterprise.

Accreditation

The BS in information technology is accredited by the Computing Accreditation Commission of ABET, Market 111 Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700.

Cooperative education

The program requires students to complete three quarters of cooperative education. Students may begin their co-op requirement after completing all second-year academic requirements. A typical schedule might include cooperative education in the summer quarter following the second year and in the spring and summer quarters of the third year.

Information technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
4002-201	Freshman Seminar	1
4002-320	Introduction to Multimedia: The Internet and the Web	4
4002-217, 218, 219	Programming for Information Technology I, II, III	12
4050-220	Cyber Self-Defense	4
1016-205, 206	Discrete Math for Technologists I, II	8
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
4050-350	Computer System Fundamentals	4
4050-351	Network Fundamentals	4
4002-331	Interactive Programming	4
4002-360	Introduction to Database and Data Modeling	4
4002-425	HCI 1: Human Factors	4
1016-319	Data Analysis I	4
	Liberal Arts*	12
	Lab Science Elective	8
	Free Elective	4
Third and Fourth Year		
	Cooperative Education (3 quarters required after year two)	Co-op
4002-455	Needs Assessment	4
4002-426	HCI 2: Interface Design and Development	4
4002-460	Technology Transfer	4
	IT Concentration Courses‡	24
1016-320	Data Analysis II	4
	Liberal Arts*	12
	Free Electives	20
	General Education Electives	18
Total Quarter Credit Hours		**181**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Two three-course concentrations are required. Concentrations include Web development, interactive multimedia development, network and system administration, database, learning and performance technology, advanced application development, and special topics. A six-course Web-database integration concentration also is available.

Additional information

Part-time study

The BS degree in information technology may be completed on a part-time basis, with courses available during the day and in the evening to accommodate those who work. The typical evening student requires approximately 23 quarters for a BS degree (this assumes no previous course work). Students with a strong associate degree may be able to complete the degree requirements in 12 quarters.

Information Technology, AAS

http://www.ist.rit.edu/

Jeffrey A. Lasky, Chair
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ADMISSION TO THIS PROGRAM HAS BEEN SUSPENDED FOR THE 2011-2012 ACADEMIC YEAR.

Program overview

The role of an IT professional, or information technologist, is diverse and multifaceted. To develop and maintain truly effective systems, information technologists need core competencies in four essential areas: Web design/development and interactive media; database, programming, and application development; networking and system administration, which includes the design, deployment, and security of computing infrastructure; and technology integration and deployment in user communities, including needs assessment, user-centered design, technology transfer, and ongoing support.

Curriculum

Information technology, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
4002-320	Introduction to Multimedia: The Internet and the Web	4
4002-217, 218, 219	Programming for Information Technology I, II, III	12
4050-220	Cyber Self-Defense	4
1016-204	Algebra and Trigonometry	4
1016-205, 206	Discrete Math for Technologists I, II	8
	Liberal Arts*	12
Second Year		
4002-331	Interactive Programming	4
4050-350	Computer System Fundamentals	4
4050-351	Network Fundamentals	4
4002-360	Introduction to Database and Data Modeling	4
4002-425	HCI 1: Human Factors	4
	IT Electives	8
	Lab Science Electives	8
	Liberal Arts*	8
	Free Elective	4
	Wellness Education†	0
Total Quarter Credit Hours		**92**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Medical Informatics, BS

http://www.ist.rit.edu/?q=node/49

Nicolas A. Thireos, Program Director
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Program overview

The BS degree in medical informatics is one of only a few programs in the United States that responds to the increasing use of computers in every aspect of health care as well as biomedical research and education. Developed by the college's departments of computer science and information technology in partnership with the College of Science, the program gives students training in the medical sciences, computer science, and information technology, with an emphasis on clinical applications. The program trains students to develop computer applications for the solution of clinical problems and to provide computing support to medical practice, medical research, and education. ABET does not accredit programs in this field.

Curriculum

The medical informatics program offers students the choice of two tracks: computer science, for those interested primarily in developing computer software for medicine; or information technology, for those interested in providing computer support for clinical information systems, databases, networks, and Web applications.

Students consult with faculty advisers to tailor their academic programs to individual career goals. Upper-level electives prepare graduates for specialized employment opportunities within medical informatics, for graduate school in the sciences or computer science/information technology, or for postgraduate professional school.

Requirements for the BS in medical informatics

Students must meet the minimum requirements of the university as described in this bulletin and, in addition, complete the requirements contained in this program. Transfer students may be required to take additional course work, depending on the program they have studied at their previous school. Specific requirements will be determined by the department for each transfer student.

Cooperative education

A minimum of two academic quarters of co-op is required after the completion of the second year of study. Co-op allows students to gain relevant, hands-on work experience in the medical informatics field, provides the opportunity to apply classroom knowledge in real-life situations, and offers networking opportunities with professionals in the field. Students alternate quarters of academic study with quarters of paid employment, starting with the summer between the second and third years. These experiences enhance students' education and make them more valuable to prospective employers.

Optional premedical track

Medical informatics is also a premedical program. Students interested in applying to medical, dental, or veterinary school after graduation should replace some of the computing courses with physics and organic chemistry. For more information, contact the program director.

Accelerated dual degree option

The college offers an accelerated dual degree option enabling students to earn a BS degree in medical informatics and an MS degree in computer science with one additional year of study. Students must declare their intention to pursue the MS degree by their third year of undergraduate study.

Medical informatics, BS degree, typical course sequence, computer science track

COURSE		QTR. CR. HRS.
First Year		
4006-230	Computers in Medicine	4
4006-240	Introduction to Medical Informatics	4
4003-241	Project-Based Introduction to Computer Science	4
4003-242	Data Structure Problem Solving	4

COURSE		QTR. CR. HRS.
4003-243	Object-Oriented Programming	4
4002-320	Introduction to Multimedia: Web	4
1026-301	Medical Terminology	3
1016-281, 282	Project-Based Calculus	8
1016-265	Discrete Mathematics	4
	Liberal Arts*	8
4002-201	Freshman Seminar	1
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
4006-310	Developing Medical Applications	4
4006-410	The Electronic Health Record	4
4006-345	Medical Informatics Seminar	1
4003-334	Computer Science 4	4
4003-485	Database Concepts	4
4006-420	Medical Database Architectures	4
1001-201, 202, 203	General Biology I, II, III	9
1001-205, 206, 207	General Biology Lab	3
1016-351	Probability and Statistics	4
	Liberal Arts*	4
	Free Elective	4
Third Year		
4006-430	Medical Application Integration	4
4003-345	Computer Organization	4
4003-420	Data Communication and Networks	4
4010-361	Software Engineering	4
	Computing Elective	4
1026-350, 360	Anatomy and Physiology	10
1026-205	Diagnostic Medical Imaging	2
	Liberal Arts*	8
	Free Elective	4
	Wellness Education†	0
4002-499	Cooperative Education	Co-op
Fourth Year		
	Computing Electives	12
1011-215, 216, 217	General and Analytical Chemistry	10
1011-205, 206, 227	General and Analytical Chemistry Lab	3
	Liberal Arts*	16
	Free Elective	4
4002-499	Cooperative Education	Co-op
Total Quarter Credit Hours		**184**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Medical informatics, BS degree, typical course sequence, information technology track

COURSE		QTR. CR. HRS.
First Year		
4006-230	Computers in Medicine	4
4006-240	Introduction to Medical Informatics	4
4002-217, 218, 219	Programming for Information Technology I, II, III	12
4002-320	Introduction to Multimedia: Web	4
1026-301	Medical Terminology	3
1016-225	Algebra for Management	4
1016-205, 206	Discrete Math for Tech I, II	8
	Liberal Arts*	8
4002-201	Freshman Seminar	1
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
4006-310	Developing Medical Applications	4

COURSE		QTR. CR. HRS.
4006-410	The Electronic Health Record	4
4006-345	Medical Informatics Seminar	1
4002-360	Database and Data Modeling	4
4002-461	Fundamental Data Modeling	4
4006-420	Medical Database Architectures	4
1001-201, 202, 203	General Biology I, II, III	9
1001-205, 206, 207	General Biology Lab	3
1016-319	Data Analysis	4
	Liberal Arts*	4
	Free Elective	4
Third Year		
4006-430	Medical Application Integration	4
	Information Technology Electives	8
4050-350	Computer System Fundamentals	4
4050-351	Network Fundamentals	4
1026-350, 360	Anatomy and Physiology	10
1026-205	Diagnostic Medical Imaging	2
	Liberal Arts*	8
	Free Elective	4
	Wellness Education†	0
Fourth Year		
	Information Technology Electives	12
1011-215, 216, 217	General and Analytical Chemistry	10
1011-205, 206, 227	General and Analytical Chemistry Lab	3
	Liberal Arts*	16
	Free Elective	4
4002-499	Cooperative Education	Co-op
Total Quarter Credit Hours		**184**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Department of Networking, Security, and Systems Administration

Applied Networking and System Administration, BS

http://www.nssa.rit.edu/

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Program overview

Networking is the technology of interconnecting multiple computers so information can flow between them. As the number of computers in the network scales up, the task becomes more difficult, involving design tradeoffs, performance considerations, and cost issues. Applied networking refers to the design, construction, operation, and maintenance of computer networks using off-the-shelf components. This includes activities as simple as cable construction to those as complex as the configuration of services and protocols to enable an entire intranet and the support of that environment.

Systems administration is the installation, configuration, operation, and support of computer systems. This includes the specification and implementation of server hardware and software.

Both areas are concerned with the security and privacy of the information that servers maintain. In today's information-rich environment, servers exist at the heart of a network and often work together to provide services and a central repository for information.

Curriculum

The BS degree in applied networking and system administration is designed to teach students to be the designers, implementers, operators, and maintainers of computing networks and networked systems (both clients and servers). Graduates will evaluate existing networks and computing systems, suggest improvements, monitor such systems for faults, and plan for growth. They work in small- to large-scale companies.

An important goal of the program is to provide students with a level of specialization in this area beyond that provided by information systems or information technology programs. To accomplish this, the program focuses specifically on the network or computing system and overall favors depth over breadth. It is this approach that allows faculty to guide students in their exploration of the technologies.

Students must complete 182 quarter credit hours to graduate from the program. Entering freshmen will earn most (if not all) of those credits at RIT. For transfer students, up to two years' worth of credits may be transferred from course work completed at previous schools.

The program includes required core courses and advanced track curriculum. The core includes a programming sequence, competency courses in multimedia and database, and a sequence in user-centered deployment. These are in addition to fundamental courses in computer networking and system administration. In addition to 60 credits of core courses, students will select 20 credits of advanced work.

Advanced track

The advanced track of study for the program requires students to choose five of the following courses:

4050-403	Wireless Network Concepts
4050-422	System Administration II
4050-423	System Administration III
4050-519	Network Troubleshooting
4050-521	Perl for System Administration
4050-530	Telephony Integration
4050-550	VoIP Security and QoS
4050-540	Network Design and Performance
4050-545	Advanced Routing and Switching
4050-582	Wireless Ad-Hoc/Sensor Networks

Students may also select themed groupings, such as the following:

Network Administration

4050-519	Network Troubleshooting
4050-530	Telephony Integration
4050-540	Network Design and Performance
4050-545	Advanced Routing and Switching
4050-582	Wireless Ad-Hoc/Sensor Networks

Systems Administration

4050-422	System Administration II
4050-423	System Administration III
4050-521	Perl for System Administration
4050-530	Telephony Integration
4050-540	Network Design and Performance

Applied networking and system administration, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
4050-202	Introduction to UNIX/Linux Seminar	1
4002-208, 210, 4050-212	C++ Programming Sequence	12
4050-350	Computer System Fundamentals	4
4050-220	Cyber Self-Defense	4
4002-320	Introduction to Multimedia: The Internet and the Web	4
1016-204	College Algebra	4
1016-205, 206	Discrete Math for Technologists I, II	8
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment	2
4050-351	Networking Fundamentals	4
Second Year		
4050-302	Scripting in Perl	4
4050-515	Introduction to Routing and Switching	4
4050-421	System Administration I	4
4050-413	Application of Wireless Networks	4
4002-360	Introduction to Database and Data Modeling	4
1016-319	Data Analysis	4
	Lab Science Electives	8
	Liberal Arts*	12
4050-203	Co-op Preparation Seminar	1
Third and Fourth Years		
	Cooperative Education (three quarters required after year two)	Co-op
4050-516	Network Services	4
4002-455	Needs Assessment	4
4002-460	Technology Transfer	4
	Advanced Track Courses‡	20
	Liberal Arts*	12
	Free Electives	20
	General Education Electives	14
	Communication Elective	4
	Wellness Education†	0
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirement for more information.
† Please see Wellness Education Requirement for more information.
‡ A five-course advanced work track is required.

Additional information

Cooperative education

Students will complete three quarters of cooperative education. Students have found co-op positions in nearly every type of business that requires a computer network or server. These vary from small- or medium-sized businesses to large international companies, from computing-centric organizations (network hardware manufacturers, software services providers) to those that are users of information technology (manufacturing companies, school districts, and the entertainment industry). Co-op gives students real-world experience and an edge when applying for jobs after graduation. Typically, co-ops occur during the summers following the second and third years and during one of the academic quarters in the third year. Students must complete their co-op requirement prior to completing their course work and preferably prior to their senior year.

Part-time study

The program is available on a part-time basis. Courses are available during the day and in the evening to accommodate those who work. The typical evening student requires 26 quarters to complete the BS degree. Please refer to the *Part-time Undergraduate Bulletin* for more information on this option.

Information Security and Forensics, BS

http://www.nssa.rit.edu/

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Program overview

The scope of computer networks and the span of these systems increases in organizations every day. At the same time, industry and society's dependence on these technologies is growing, as is the creation of damaging software that attacks computing systems and networks. Therefore, security has become a major concern. The result is an increased need for people and technologies that can secure information infrastructures and protect them from attack.

The BS degree in information security and forensics produces professionals who understand people and processes. In addition to possessing state-of-the-art knowledge in the preservation of information assets, students become experts in the identification of computer security vulnerabilities. Students also understand the forensic requirements needed to prove an attack occurred, identify its origin, assess the extent of the damage or loss of information, and design strategies that ensure data can be recovered.

An important goal of the program is to provide students with a level of specialization in information security and forensics beyond what is provided by more general programs offered in information systems or information technology. RIT accomplishes this by focusing on network and computing system security and forensics. The program favors depth over breadth, affording students sufficient time to explore the issues and technologies of computer and network security.

Curriculum

The program requires students to complete 182 quarter credit hours. For transfer students, some of these credits may be transferred from course work completed at other accredited institutions.

The program features both required core courses and an advanced track. The core includes a programming sequence, an ethics course, a computer networking and system administration sequence, and foundation courses in computer and network security. In addition to 64 quarter credit hours of core courses, students will select one of two advanced tracks for 16 quarter credit hours.

Advanced tracks

Students select one of the following two tracks. Before beginning either advanced track, they must successfully complete Ethics in Information Technology (4002-415).

Network and Wireless Security

4050-517	Network Forensics and Security
4050-523	Security of Wireless Networks
4050-525	Wireless Ad-hoc and Sensor Network Security
4050-585	Networks and System Security Audits

Computer System Security

4050-422	System Administration II
4050-580	Computer System Security
4050-581	Computer System Forensics
4050-585	Networks and System Security Audits

Information security and forensics, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
4050-202	Introduction to UNIX/Linux Seminar	1
1105-051, 052	First-Year Enrichment	2
4050-220	Cyber Self-Defense	4
4002-208, 210	C++ Programming I, II	8
4050-350	Computer System Fundamentals	4
4050-351	Network Fundamentals	4
1016-204	College Algebra	4
1016-205, 206	Discrete Math for Technologists I, II	8
	Liberal Arts*	16
Second Year		
4050-413	Application of Wireless Networks	4
4050-302	Scripting in Perl	4
4050-212	Client/Server Programming	4
4050-360	Information Security Policies	4
4050-515	Introduction to Routing and Switching	4
4050-421	System Administration I	4
4050-365	Cryptography and Authentication	4
1016-319	Data Analysis	4
	Lab Science Electives	8
	Liberal Arts*	8
	Wellness Education†	0
4050-203	Co-op Preparation Seminar	1
Third and Fourth Years		
	Cooperative Education (three quarters required after year two)	Co-op
4050-460	Introduction to Computer Malware	4
4050-516	Network Services	4
4002-415	Ethics in Information Technology	4
4002-455	Needs Assessment	4
	Advanced Track Courses‡	16
	Liberal Arts*	12
	Free Electives	20
	Communications Elective	4
	General Education Electives	14
	Wellness Education†	0
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education for more information.
‡ A four-course advanced track is required. Students must complete either the networking security track or the computer system security track.

Additional information

Cooperative education

Students complete three quarters of cooperative education, which enables them to work in a variety of organizations, from small- or medium-sized businesses to large international companies or law enforcement organizations, that require computer systems or computer networks. These may be security-centric businesses (law enforcement agencies, security auditors) to users of information technology (manufacturing companies, school districts, health care). Completing a co-op provides real-world experience and an

edge when applying for jobs after graduation. Typically, the first co-op occurs during the summer following the second year. The remaining co-ops may occur during the student's third year or the following summer. Students must complete the co-op requirement prior to completing their course work.

Part-time study

The program is available on a part-time basis. Courses can be completed during the day and in the evening to accommodate those who work, regardless of their schedules. The typical evening student requires 26 quarters to complete the BS degree. Please refer to the part-time undergraduate guide for more information on this option.

School of Interactive Games and Media

Game Design and Development, BS

igm.rit.edu/

Andrew Phelps, Director
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Program overview

The BS in game design and development allows students to explore the entertainment technology landscape, as well as related areas, while pursuing a broad-based university education. The program has its technical roots in computing and information sciences. Simultaneously, students explore the breadth of development processes through involvement in topics such as game design, design process, and animation.

The program focuses on development while meeting the industry need for developers who will be involved in the design process from inception through completion. The degree is for students who aspire to careers within the professional games industry or a related field such as simulation, edutainment, or visualization. It focuses on producing graduates who understand the technical roots of their medium, the possibilities that creative application of software development affords, and the way in which their industry operates. This degree also provides students with a core computing education that prepares them for graduate study in a number of computing fields and for employment in more general computing professions.

Curriculum

The program is a four-year undergraduate program in which students complete a core of required course work and then pursue advanced studies that can be customized to individual interests and career goals. In addition, all students complete general education requirements in the liberal arts, social sciences, mathematics, and laboratory sciences. Students can further customize their experience through both general education electives and free electives.

In particular, the program integrates strong programming skills, which are mandatory in the game development field, with game design and collaborative skills essential to success in the games industry, where multifaceted professionals are in high demand to work on game development teams.

Game design and development, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
4080-201	Freshman Seminar in Game Design and Development	1
4080-221, 222, 223	Game Software Development I, II, III	12
4080-295	Introduction to Interactive Media	4
1016-230	Pre-Calculus	4
1016-205, 206	Discrete Math for Technologists I, II	8
Choose one of the following physics sequences:		
1017-211, 212	College Physics I, II	4
1017-311, 312	University Physics I, II	4
	Liberal Arts*	12
	Wellness Education†	0
1720-050, 052	Discovery/Pathways	2
Second Year		
4080-330	Interactive Digital Media	4
4002-360	Introduction to Database and Data Modeling	4
4080-346	2D Animation for Interactive Media	4
4080-347	3D Modeling and Animation for Interactive Media	4
4080-309	Introduction to Website Design	4
4080-380, 381	Fundamentals of Game Design and Development I, II	8
4080-387	Data Structures and Algorithms for Game Design and Development I	4
4050-210	Networking Essentials	4
1016-228	Analytic Geometry	4
	Liberal Arts*	8
Third and Fourth Years		
	Cooperative Education‡	Co-op
4080-417	Visual C++ for Programmers	4
4080-434	Programming for Digital Media	4
4002-425	HCI1: Human Factors	4
4080-487	Data Structures and Algorithms for Game Design and Development II	4
	Advanced Studies§	20
	Liberal Arts*	16
	General Education Electives	18
	Free Electives	12
Total Quarter Credit Hours		**181**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirements for more information.
‡ Three quarters of cooperative education are required after year two.
§ Five courses chosen from a pool of 16 advanced game design and development electives in areas such as computer graphics programming, multi-user interactivity, animation, artificial intelligence, writing for interactive media, and database/server programming.

Cooperative education

Students are required to complete three quarters of cooperative education. Co-op students have found work in the games industry and related domains, both regionally and nationally, at companies both large and small. Co-op gives students real-world experience, a definite edge when applying for jobs after graduation.

The design of this program had considerable input from leaders in the games industry. Companies want employees who can work in interdisciplinary teams, and they actively recruit our graduates into the games industry.

New Media Interactive Development, BS

igm.rit.edu

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Program overview

The last decade has seen unprecedented innovation in technologies for communication, computation, interactivity, and delivery of information. New media touch nearly all of us daily through online games, search engines, dynamic and personalized websites, high-definition home entertainment, handheld devices, and instant connectivity. Educators, advertising agencies, design studios, and a wide variety of industries use new media to reach target audiences for advertising, entertaining, training, transacting business, and expressing creative ideas.

Two huge underlying factors—Internet connectivity and computer processing—have transformed the media landscape dramatically. New media are dynamic, personalized, and connected. They change the way we learn, communicate, affiliate, and play. For the world to benefit from these changes there is a need for practitioners who can integrate evolving technologies with creative disciplines.

In a field that is changing rapidly, successful practitioners must have a solid foundation in cutting-edge technologies, a well-honed sense of design, and the skills to put creative ideas into practice. The new media interactive development program has been carefully formulated to provide students with a balanced background in design and technology, and an emphasis on independent problem solving in a constantly evolving field.

Curriculum

The BS degree in new media interactive development features core courses; specialty courses in the areas of graphic design, photographic imaging, video, publishing, programming, and interactive games and media; and a senior project that brings together all of the curriculum into a singular project at the conclusion of the academic program.

The senior project tackles real-world new media issues and provides an opportunity for students to hone their skills in collaboration with students from different disciplines in a setting that mirrors current industry practice.

Leaders from the new media industry had considerable input to the design and structure of the program. The course work ensures that students gain experience working on interdisciplinary teams and brings the value of their senior project and cooperative education experiences together to enhance the overall educational experience.

Cooperative education

In addition to the senior project, new media interactive development students are required to complete three quarters of cooperative education. This gives students real-world experience and an edge when applying for jobs after graduation.

New media interactive development, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
4080-229	Introduction to New Media Interactive Development	4
4080-295	Introduction to Interactive Media	4
2009-221	Principles: Imaging for New Media	4
4080-230	Introduction to Programming for New Media	4
4080-231	Programming II for New Media	4
2009-213	Elements of Graphic Design	3
4050-210	Networking Essentials	4
4080-309	Introduction to Website Development	4
	Wellness Education†	0
1016-230	Pre-Calculus	4
	Liberal Arts*	12
1720-050, 052	Discovery/Pathways	2
Second Year		
4080-333, 334	Programming for New Media III, IV	8
	New Media Studio Electives‡	6-8
4080-323	Design of the Graphical User Interface	4
4080-431, 432	New Media Web Technologies I, II	8
1016-205, 206	Discrete Math for Technologists I, II	8
	Liberal Arts*	12
	Cooperative Education (three quarters required)	Co-op
Third and Fourth Year		
	New Media Advanced Electives§	24
1016-319	Data Analysis	4
	Lab Science Electives	8
	Liberal Arts*	12
	General Education Electives	18
	Free Electives	12
4080-560, 565	New Media Team Project I, II	8
Total Quarter Credit Hours		**180-182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Two courses selected out of a pool of five will cover topics such as animation, video, typography, and game design.
§ Six advanced new media courses form a track selected by the student in consultation with an adviser.

Department of Software Engineering

Software Engineering, BS

http://www.se.rit.edu/

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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 is a unique program that combines traditional computer science and engineering with specialized course work in software engineering.

Students learn principles, methods, and techniques for the construction of complex and evolving software systems. The program 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.

Curriculum

An important component of the curriculum is 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. Three engineering electives, plus a three-course sequence in an application domain, provide the opportunity to connect software engineering principles to areas in which they may be applied. A required course in economics or finance bridges software engineering with the realities of the business environment.

The liberal arts component of the program consists of six core courses and a three-course concentration. A required ethics course helps students develop a sense of professionalism and social responsibility in the technical world.

Senior projects in software engineering

One of the hallmarks of RIT's engineering programs is a senior project sequence that each student completes before graduation. Software engineering students take this two-course sequence during the winter and spring quarters prior to graduation. The goal of the course is to have seniors synthesize and apply the knowledge and experience they have gained at RIT and on co-op assignments.

Winter quarter: At the start of the winter quarter, students organize themselves into teams, based on the number and complexity of the projects available. The bulk of the winter quarter is primarily 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.

Spring quarter: The spring quarter is devoted to tactical issues of development and deployment. It is during this quarter that the careful planning and disciplined design from the winter quarter bear fruit in the construction, integration, testing, and demonstration of a complete system.

Companies and other organizations with challenging technical problems frequently contact software engineering faculty, and in many cases these problems are appropriate for assignment to a senior project team.

Companies and organizations that have sponsored senior projects include Nortel Networks, Northrup Grumman Security Systems, Intel Corp., Webster Financial Group, Primavera Systems, Nokia, IBM Thomas Watson Research, PaeTec Communications, Alstom Signaling Inc., Eastman Kodak Co., 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.

Cooperative education

Students must complete four quarters of cooperative education prior to graduation. Students typically begin co-op in their third year of study, alternating academic quarters and co-op blocks. To ensure that co-op is integrated with the academic program, students must complete their final co-op block prior to taking Software Engineering Project I (4010-561).

Software engineering, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
4010-101	Freshman Seminar	1
4003-241	Problem-Based Introduction to Computer Science	4
4003-242	Data Structure Problem Solving	4
4003-243	Object-Oriented Programming	4
1016-281, 282, 283	Calculus I, II, III	12
1016-265, 366	Discrete Mathematics I, II	8
	Liberal Arts*	8
	Wellness Education†	0
1720-050 052	First-Year Enrichment I, II	2
Second Year		
4010-350	Personal Software Engineering	4
4010-361	Software Engineering	4
4010-362	Engineering of Software Subsystems	4
0535-351	Professional Communications	4
1017-311	University Physics 1	4
Choose one of the following science sequences:		8
1017-312, 313	University Physics II, III	
1011-215, 216 205, 206	Chemical Principles I, II, and Labs	
1001-201, 202, 205, 206	General Biology I, II, and Labs	
1016-314	Engineering and Statistics	4
0306-340	Engineering Fundamentals of Computer Systems	4
4003-380	Introduction to Computer Science Theory	4
	Liberal Arts*	8
	Wellness Education†	0
Third, Fourth, and Fifth Year		
	Math/Science Elective‡	4
4010-456	Software Process and Project Management	4
4010-444	Engineering Methods for Software Usability	4
4010-441	Principles of Concurrent Systems	4
4010-540	Principles of Software Architecture and Design	4
4010-420	Formal Methods of Specification and Design	4
4010-555	Software Requirements Engineering	4
4010-561, 562	Software Engineering Project 1, 2	8
	Software Engineering Electives**	12
	Application Domain Electives§	12
	Engineering Electives††	12
	Free Electives	12
	Liberal Arts*	20
	Cooperative Education (four quarters required)	Co-op
Total Quarter Credit Hours		**195**

* Please see Liberal Arts General Education Requirements for more information.

† Please see Wellness Education Requirement for more information.

‡ Software engineering majors are required to take one four-credit math/science elective from the following list: College Chemistry (1011-208), General Biology (1011-201), Matrix Algebra (1016-331), Combinatorial Mathematics (1016-365), Differential Equations (1016-306) or Theory of Graphs and Networks (1016-467)

§ Each student must complete a three-course sequence in an application domain related to software engineering. Current domains include industrial and systems engineering, bioinformatics, business applications, computational mathematics, computer security, economics, interactive entertainment, public policy, remote sensing, usability, computer engineering, artificial intelligence, scientific and engineering computing, imaging and publishing technology.

** Students must choose three of the following courses: Principles of Distributed Software Systems (4010-442), Principles of Information Systems Design (4010-443), Software Process and Product Quality (4010-450), Software Testing (4010-452), or Agile Software Development (4010-556).

†† Each student must complete three separate or related engineering electives. Choices can be made from software engineering, industrial and systems engineering, computer engineering, and other pre-approved computer science courses. Prerequisites apply.

Additional information

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 general users lab. In addition, our freshmen are encouraged to take advantage of the department's mentoring lab. Staffed by advanced software engineering students, the mentoring lab offers our newest students an environment where they can learn from those who have successfully fulfilled most of the program's academic requirements.

Students enrolled in software engineering courses also can use any of the department's 11 team rooms. Equipped with a computer and projector, Ethernet connections, a meeting table, comfortable seating for six, and generous whiteboard space, these rooms support the department's commitment to teamwork, both inside and outside the classroom.

Senior software engineering students have unrestricted access to the department's projects lab for the duration of their senior projects. All of these facilities are connected to the campus network and to the Internet.

Exploration Programs

Computing Exploration, Undeclared

Jim Vallino, Computing Exploration Faculty Coordinator
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Program overview

The computing exploration option is designed for students who are interested in computing but are unsure whether computer science or software engineering is the correct choice for them. Students in the exploration option spend their first and part of their second year exploring computer science and software engineering before selecting a major.

The computing exploration option has been carefully designed so that students will stay on track for graduation regardless of whether they select the computer science or software engineering major. Each student is assigned an adviser who will meet regularly to discuss course selection, provide guidance, and discuss career options.

Curriculum

Computing exploration option, freshman course sequence

COURSE		QTR. CR. HRS.
Fall Quarter		
	Introduction to Computing and Informatics	1
4003-241	Problem-Based Introduction to Computer Science	4
1016-281	Project-Based Calculus	4
	Liberal Arts*	8
1720-050	First-Year Enrichment	1
Winter Quarter		
4003-242	Data Structures for Problem Solving	4

COURSE		QTR. CR. HRS.
1016-282	Project-Based Calculus II	4
1016-265	Discrete Mathematics I	4
	Liberal Arts*	4
1720-051	First-Year Enrichment	1
Spring Quarter		
4003-243	OOP Using Java	4
1016-283	Project-Based Calculus III	4
1016-366	Discrete Mathematics II	4
	Liberal Arts*	4
	Wellness Education†	0
Fall Quarter		
4010-361	Introduction to Software Engineering	4
4003-380	Introduction to Computer Science Theory	4
1017-311	University Physics	4
	Liberal Arts*	4
Total Quarter Credit Hours		**67**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Informatics Exploration, Undeclared

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Program overview

The informatics exploration option is designed for students who have an interest in computing but are unsure which program best meets their career goals. Students in the informatics exploration option will spend their first year exploring four programs of study—applied networking and system administration, information security and forensics, information technology, and medical informatics—before selecting one program as their major. This option has been carefully designed so that students may explore each program without wasting credits toward graduation. Each student will have an assigned academic adviser to provide guidance on course selection, minors, and career options.

Curriculum

Informatics exploration option, first-year course sequence

COURSE		QTR. CR. HRS.
Fall Quarter		
	Introduction to Computing and Informatics	1
4002-217	Programming for IT I	4
1016-205	Discrete Math for Technologists I	4
	Liberal Arts*	4
4002-320	Introduction to Multimedia: The Internet and the Web	4
1720-050	First-Year Enrichment	1
Winter Quarter		
4002-218	Programming for IT II	4
Choose one of the following:		4
4050-220	Cyber Self-Defense	
4006-240	Introduction to Medical Informatics	
	Liberal Arts*	4
Choose one of the following:		4
1016-205	Discrete Math for Technologists I	
1016-206	Discrete Math for Technologists II	
1720-051	First-Year Enrichment	1

COURSE		QTR. CR. HRS.
Spring Quarter		
4002-219	Programming for IT III	4
Choose one of the following:		4
1016-206	Discrete Math for Technologists II	
4002-360	Introduction to Database and Data Modeling	
	Lab Science Elective	4
4050-350	Computer System Fundamentals	4
	Wellness Education†	0
Total Quarter Credit Hours		**51**

* Please see Liberal Arts General Education Requirements for more information.

† Please see Wellness Education Requirement for more information.

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Stanislaw Radziszowski, MS, Ph.D., University of Warsaw (Poland)—Professor

Rajendra K. Raj, BS, Indian University of Technology; MS, University of Tennessee; Ph.D., University of Washington—Professor

Manjeet Rege, BS, University of Mumbai (India); MS, Eastern Michigan University; Ph.D., Wayne State University—Assistant Professor

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Walter A. Wolf, BA, Wesleyan University; MS, Rochester Institute of Technology; MA, Ph.D., Brandeis University—Professor

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School of Interactive Games and Media

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Yin Pan, BS, MS, Shanghai Normal University; MS, Ph.D., State University of New York at Binghamton—Associate Professor

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Software Engineering

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Kate Gleason College of Engineering

Harvey Palmer, Dean

www.rit.edu/kgcoe

Programs of study

Bachelor of Science degrees in:

Biomedical Engineering	58
Chemical Engineering	60
Computer Engineering	61
Electrical Engineering	63
Industrial Engineering	66
Mechanical Engineering	68
Microelectronic Engineering	71

The programs 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. The college offers programs leading to bachelor of science degrees in biomedical, chemical, computer, electrical, industrial, mechanical, and microelectronic engineering. All students participate in a five-year program that integrates the college's comprehensive four-year academic program with five quarters of cooperative education experience.

Our engineering programs are strongly oriented toward mathematics and the physical sciences. The first two years emphasize these subjects to establish a foundation for the applied sciences and engineering subjects that follow in the third, fourth, and fifth years. Students acquire hands-on design experience in their first year, and engineering fundamentals are introduced as early as possible into the curriculum. This helps students develop a strong appreciation for the engineering discipline and to prepare them for meaningful work experience in their first co-op job, which usually occurs after the second year of study. Advanced courses in the discipline, as well as applications, are taught in the fourth and fifth years.

Each program of study has a full complement of technical and free electives so that students may tailor their educational experiences to address special interests and career goals. In particular, all programs offer the flexibility of pursuing minors in the full range of academic disciplines, from business to foreign languages to the arts. In their fifth year, all students participate in Senior Design. This course challenges students to work together to find solutions to industry-inspired engineering problems. A distinctive element of the Kate Gleason College is its broad-based, multidisciplinary design initiative that provides the opportunity for teams of students from a variety of disciplines to generate creative and innovative solutions to real-world problems.

In addition to the foundation and engineering courses in each program, students take a variety of other courses that enhance their education. In modern society, engineering decisions are rarely made without considering the ethical and socio-economic impacts. Because the ability to communicate clearly and effectively with others is indispensable to an engineer, a significant portion of each program's curriculum is devoted to the liberal arts. These courses sensitize students to the factors that surround most decision-making situations, improving their ability to communicate with others, making their professional lives more meaningful, and encouraging their positive impact on society.

Goals

The overarching goals of the engineering program are:
- to educate students to be engineering professionals who are highly marketable and will make an immediate impact in the workplace, and
- to provide graduates with the educational foundation needed to succeed in selective graduate programs across the nation.

The Kate Gleason College accomplishes these goals by:
- integrating cooperative education into the program for all students,
- providing a strong foundation in mathematics and science as well as an appropriate balance between the liberal arts and technical courses,
- establishing an appropriate balance between the engineering design and engineering science components of the program,
- incorporating a strong laboratory component that is supported by outstanding laboratory facilities, and
- having a diverse faculty committed to engineering education.

Advances in engineering and technology are occurring at a rapid rate. Our career-oriented programs allow us to respond quickly to these changes, keeping our curriculum current and responsive to industry needs.

Admission requirements

For more information on undergraduate admission, including freshman and transfer admission guidelines, please refer to 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.

Faculty

The college's faculty is dedicated to teaching, research, and professional development with an emphasis on student involvement and success. Many faculty members have significant industrial experience that enhances their ability to convey the relevance of the subject matter in multiple contexts. Over 90 percent of the faculty members hold doctoral degrees.

Facilities and resources

The engineering programs of the Kate Gleason College reside in a building complex that includes almost 300,000 square feet of classrooms, machine shops, computer-based design capabilities, and specialized laboratories for teaching and research. Highlights include an integrated circuit design center, computer labs with industry-standard CAD software packages, more than 10,000 square feet of clean-room laboratory space for the fabrication of integrated circuits, a machining and manufacturing center equipped with state-of-the-art computer numerically controlled (CNC) machinery, and a first-rate engineering design center to teach product development and innovation. The engineering complex offers wireless access throughout.

We take pride in the effectiveness with which engineering practice is integrated into our academic programs. All programs incorporate classroom and laboratory instruction, engineering research projects, and special projects to prepare students for their industrial work assignments or for advanced study in graduate school.

Cooperative education

RIT's cooperative education requirement enhances the knowledge students acquire in the academic setting with on-the-job experience. The exposure is invaluable in bringing the engineering discipline to life for students, providing a meaningful framework for the complex concepts that are studied in the classroom. Co-op experiences also acquaint students with the constraints imposed by the industrial environment on the solution of real-world engineering problems and help them decide which career path would be most rewarding. Each student makes co-op employment arrangements with assistance from a co-op coordinator in the Office of Cooperative Education and Career Services.

Students typically begin co-op after two years of study, at a time when their educational background qualifies them for jobs that require meaningful engineering work. Two examples (A and B) of how cooperative education may be integrated into the academic program are shown.

YEAR		FALL	WINTER	SPRING	SUMMER
One and two		RIT	RIT	RIT	
Three and four	A	RIT	Co-op	RIT	Co-op
	B	Co-op	RIT	Co-op	RIT
Five	A	RIT	Co-op	RIT	
	B	Co-op	RIT	RIT	

Accreditation

All of the college's bachelor of science programs are fully committed to achieving and maintaining 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 quarter of study, all graduating seniors are eligible and encouraged to sit for the Fundamentals of Engineering section of the New York State Professional Engineering examination.

Advising

Upon entry into the Kate Gleason College, each student is assigned a faculty adviser who is available for academic advising and career counseling. In addition, the college's Student Services Office provides specialized co-curricular programs and individual counseling to meet students' needs.

Academic enrichment

The Honors Program: The Honors Program is designed to enrich the academic and professional experiences of some of the best students who apply to RIT. Honors participants have access to distinctive courses, receive special advising within the college, and enjoy privileges such as early registration and access to special housing. Engineering students enrolled in the Honors program will participate in a curriculum that focuses on product innovation for a global economy and strives to educate students about how engineers become leaders who shape the future of our society. Highlights include all-expenses-paid trips to key industry centers, which expose students to best practices in the conceptualization, development, design, and manufacture of innovative products from both a domestic and global perspective. Travel destinations have included a variety of major city centers known for their diverse portfolio of engineering companies (e.g., Seattle, San Francisco, Austin, Texas; and Guadalajara, Mexico). Seminars and social events with engineering faculty and advisers round out the program.

Minors: RIT offers students more than 95 minors to choose from to enhance their academic program or further develop a personal area of interest. For a detailed list of minors, including courses, please refer to the Minors section of this bulletin.

Study Abroad: RIT encourages all students to consider a study abroad program. Students may study full time at a variety of host schools and are able to select both courses in their majors and/or liberal arts classes. The Study Abroad Office has information about foreign study options and opportunities. Students may choose to take advantage of a growing number of opportunities for study abroad, co-op placement outside the United States, or collaboration with students at an international university.

Writing competency: All students are required to be proficient in writing the English language. This is accomplished through required courses in the liberal arts and through writing requirements established and monitored by individual departments. A passing grade on the college's writing test, administered in the third, fourth, or fifth year, is required for graduation.

Professional student organizations: The college maintains memberships in the following professional organizations: Biomedical Engineering Society, American Institute of Chemical Engineers, American Society of Mechanical Engineers, Institute of Electrical and Electronic Engineers, Institute of Industrial Engineers, Microelectronic Engineering Student Association, National Society of Black Engineers, Society of Automotive Engineers, Society of Hispanic Professional Engineers, Society of Manufacturing Engineers, and Society of Women Engineers.

Special Opportunities

Accelerated dual degree options: Some programs offer accelerated, five-year dual BS/MS, BS/ME, or BS/MBA degree options. These degrees offer students the opportunity to earn a bachelor's degree and a master's degree in less time than pursuing each degree individually. Please refer to individual programs, the *Graduate Bulletin*, or the college's website for more information.

Graduate study: The college offers a doctorate degree in microsystems engineering; master of science degrees in applied statistics, computer engineering, electrical engineering, industrial engineering, manufacturing engineering, materials science and engineering (offered jointly with the College of Science), mechanical engineering, microelectronic engineering, product development, and sustainable engineering; master of engineering degrees in engineering management, industrial engineering, mechanical engineering, microelectronics manufacturing engineering, sustainable engineering, and systems engineering; and advanced certificates in statistical methods for product and process improvement, statistical quality, and vibrations engineering. For more information regarding these graduate programs, please refer to the *Graduate Bulletin* or visit the college's website.

Women and minorities in engineering: The Kate Gleason College is proud of its many co-curricular programs that have helped build a strong sense of community among its students and faculty. Focused on student success, the college's Office of Student Services manages a variety of special programs to enhance the quality of the educational experience for female and minority engineering students.

WE@RIT is dedicated to increasing the representation of women within the engineering disciplines through outreach and community building. Current students can participate in these programs and learn valuable leadership skills, network with women engineers in the area, and have access to resources that help prepare them for success. For more information visit www.rit.edu/kgcoe/women/.

Biomedical Engineering, BS

http://www.rit.edu/kgcoe/biomedical

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Program overview

Educational objectives

The bachelor of science degree in biomedical engineering prepares graduates to:

- apply fundamental knowledge, skills, and tools of engineering in a wide variety of biomedical application domains.
- possess a broad education and knowledge of contemporary issues relevant to the practice of the biomedical engineering profession.
- engage in lifelong learning as a means of adapting to change, refining skill level, and remaining aware of professional and societal issues.
- communicate effectively as individuals, and within and across teams.
- accept the professional and ethical responsibilities to function as a biomedical engineer in society.
- work as engineering professionals in the private or public sector.
- enter graduate education programs and obtain advanced degrees if desired.

Biomedical engineers are intimately involved in the development of devices and techniques to address health-state issues. Such development is inherently a multidisciplinary endeavor requiring expertise from a wide range of professionals, and in particular engineers from the classical disciplines such as chemical, electrical, and mechanical engineering. This is true whether in industrial, research, or clinical settings. A fully successful multidisciplinary team must have at least one member who possesses a comprehensive understanding of the highly variable and intricate nature of the biomedical system of interest. This team member must possess the quantitative and analytical engineering skills needed to precisely define the challenge that is being addressed and assess the relative effectiveness of plausible solution strategies. This crucial role can be performed effectively by a biomedical engineer expressly educated to meet those requirements and qualifications.

The BS degree in biomedical engineering delivers a focused curriculum that targets the biomedical enterprise from a highly quantitative and analytically rigorous perspective. The goal is to enable participants to compete successfully for engineering-related positions immediately upon graduation or to pursue post-graduate education in engineering, science, or medicine. Undergraduates will have the ability to contribute significantly to the development of new knowledge, understanding, and innovative solutions in the health care industry and across a wide variety of health care related research applications.

Curriculum

Biomedical engineering is a five-year program consisting of 50 weeks of cooperative employment experience and the following course requirements: biomedical engineering core (74 quarter credit hours), professional technical electives (12 quarter credit hours), science and mathematics (62 quarter credit hours), liberal arts (36 quarter credit hours), free electives (12 quarter credit hours), wellness education (0 quarter credit hours), and First-Year Enrichment (2 quarter credit hours). The program culminates in the fifth year with a two-course multidisciplinary design sequence, a capstone design experience that integrates engineering theory, principles, and processes within a collaborative environment that bridges engineering disciplines.

Biomedical engineering, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0310-051	Discovery Biomedical Engineering	1
1720-052	Pathways‡	1
0310-181	Biomedical Engineering Seminar	1
0310-182, 183	Introduction to Biomedical Engineering I, II	2
1011-215, 216, 217	General Chemistry I, II, III	10
1011-205, 206, 227	General Chemistry Lab I, II, III	3
1017-311, 312	University Physics I, II and Labs	10
1016-281, 282, 283	Calculus I, II, III	12
	Liberal Arts*	12
	Wellness Education†	0
Second Year		
0310-200	Functional Anatomy and Lab	4
0310-250	Engineering Analysis I	4
0310-320	Mechanics of Biosystems and Lab	4
0310-310	Thermo I: Single Component	4
0310-370	Biomaterials Science and Lab	4
0310-330	Bio E&M and Lab	5
0309-320	Fluid Mechanics I	4
1016-305	Multiple Variable Calculus	4
1016-306	Differential Equations	4
1004-240, 241	Cell and Molecular Biology for Engineers I, II and Lab	8
1004-242	Biocompatibility and the Immune System	3
	Wellness Education†	0
Third Year		
0310-410, 411	System Physiology I, II and Labs	8
0310-440	BME Signals and Analysis and Lab	5
0310-450	Engineering Analysis II	4
0307-361, 362	Probability and Statistics for Eng. I, II	8
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
0310-412	System Physiology III and Lab	4
0304-646	Biomedical Device Engineering	4
0307-420	DOE for BME	4
0310-550	Dynamics and Control of Biomedical Systems	5
	Professional Technical Elective	4
	Liberal Arts*	8
	Free Elective	4
	Cooperative Education (2 quarters)	Co-op
Fifth Year		
0309-591, 592	Multidisciplinary Design I, II	8
	Professional Technical Electives	8

COURSE	QTR. CR. HRS.
Liberal Arts*	8
Free Electives	8
Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours	**198**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Students are required to complete one Pathways course. Students may choose from Innovation/Creativity (1720-052), Leadership (1720-053), or Service (1720-054). These courses may be completed in the winter or spring quarter.

Concentrations

Biomedical device and system design
Students will develop the ability to propose and assess innovative ideas and understand the type of analysis and assessment tools that are key elements in the process of developing robust designs. Constraints on such designs are safe and efficient devices, systems, and processes for biomedical applications. This represents a need in industrial, research, and clinical environments, and includes therapeutic, rehabilitative, and research-oriented developments.

Biomedical signal processing
Biological systems are inherently complex and are composed of processes, mechanisms, and phenomena that interact, often in parallel and across a wide range of scales and environments. The ability to determine key aspects of those systems for biomedical applications requires a rigorous and in-depth capability to detect, process, and interpret signals that can be extracted and measured, often in the midst of noise and confounding information. Producing reliable information that can be used to assess or understand those systems requires careful processing and interpretation of available signals.

Physiological modeling, dynamics, and control
Homeostasis is fundamentally a feedback process. Generally, biological systems contain a myriad of interrelated and interacting feedback systems that are inherently non-deterministic in nature and usually have a variety of optimal or satisfactory operating points. If the goal of a therapeutic or rehabilitative system or intervention is to predict the outcome of some intended action, then it becomes essential to accurately model the behavior of the relevant characteristics of the targeted system. This type of analysis can be used to support fundamental research as well as help provide guidance to develop a new device or system. A concentration in this area builds on the core elements of the curriculum as well as an understanding, from a systems perspective, of human physiology.

Biomaterials
An important feature of materials intended for biomedical applications is their compatibility with the environment in which they are employed. This presumes a solid knowledge and understanding of a wide variety of biologically compatible materials. Similarly, the dynamic behavior of the materials in response to stress, strain, and wear must often be assessed in terms of efficacy, safety, and durability. Useful and rigorous modeling, as well as the design and evaluation of material performance, requires a strong foundation in physics, chemistry, and mathematics (including statistics) along with an understanding of appropriate and accurate analysis methods. Courses for this type of work are provided in the core curriculum of the program. However, electives that provide additional expertise in this area (e.g.: material science, probability and

statistics, chemistry and chemical engineering) may be obtained by selecting the biomaterials concentration.

Chemical Engineering, BS

http://www.rit.edu/kgcoe/chemical

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Program overview

Educational objectives
The bachelor of science degree in chemical engineering prepares students to:

- apply fundamental knowledge, skills, and tools of chemical engineering in a wide variety of application domains.
- possess a broad education and knowledge of contemporary issues relevant to the practice of the chemical engineering profession.
- engage in lifelong learning as a means of adapting to change, refining skill level, and remaining aware of professional and societal issues.
- communicate effectively as individuals within and across teams;
- accept the professional and ethical responsibilities to function as a chemical engineer in society.
- work as engineering professionals in the private or public sector.
- enter graduate education programs and obtain advanced degrees if desired.

Chemical engineering is the branch of engineering that 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 art to overcome technical problems in a safe and economical fashion. Yet, it is the chemical engineer alone who provides the critical level of expertise needed to solve problems in which chemical specificity and change have particular relevance. In research and development, chemical engineers 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. Chemical engineers have made well-known contributions—among them: 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. The breadth of scientific and technical knowledge inherent in the chemical engineering curriculum encourages some to describe the chemical engineer as the "universal engineer." Indeed, this breadth explains why chemical engineers excel in leading multidisciplinary teams. Moreover, the special focus within the discipline on process engineering cultivates a "systems perspective" that makes chemical engineers extremely versatile and capable of handling a wide spectrum of technical problems.

Students graduating from the chemical engineering program will have a firm and practical grasp of engineering principles and the underlying science associated with traditional chemical engineering applications, and will also learn to tie together phenomena at the nano-scale with the behavior of systems at the macro-scale.

While chemical engineers have always excelled at analyzing and designing processes with multiple length scales, modern chemical engineering applications require this knowledge to be extended to the nano-scale, and our program addresses this emerging need.

Curriculum

Chemical engineering is a five-year program consisting of 50 weeks of cooperative education and the following course requirements: chemical engineering core (76 quarter credit hours), professional technical electives (12 quarter credit hours), science and mathematics (60 quarter credit hours), liberal arts (36 quarter credit hours), free electives (12 quarter credit hours), wellness education (0 quarter credit hours), and First-Year Enrichment (2 quarter credit hours).

The core of the program consists of 23 courses that provide students with a solid foundation in engineering principles and their underlying science. The program culminates in the fifth year with 20 weeks of multidisciplinary design, a capstone design experience that integrates engineering theory, principles, and processes within a collaborative environment that bridges engineering disciplines. Students also choose three professional technical electives to form a concentration in one of five key application domains: biomedical, alternate energy systems, advanced materials, semiconductor processing, and environmental issues. Other concentration areas are also possible with the guidance of a faculty adviser, and can be chosen to reflect current societal needs and student interest. Students choose professional technical electives from a department-approved list of courses offered throughout the university in addition to those offered by the chemical engineering department.

Rounding out the program are courses in mathematics and science that help to develop students' knowledge of science and its significance in the field of chemical engineering. Free electives provide students the opportunity to choose additional course work to enhance a personal or professional interest, and liberal arts courses help to develop students' broader understanding of society, the humanities, and the arts.

Cooperative education
Cooperative education is a key component of the chemical engineering program. The 50-week requirement is met with five co-op blocks of 10-week duration. These full-time, paid experiences enable students to apply what they've learned in the classroom to real work scenarios. Students will also have the chance to network with professionals in the field and learn in a hands-on environment.

Chemical engineering, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0309-051	Discovery Chemical Engineering	1
1720-052	Pathways‡	1
0309-181, 182, 183	Chemical Engineering Insights I, II, III	3
1011-215, 216, 217	General Chemistry I, II, III	10
1011-205, 206, 227	General Chemistry Lab I, II, III	3
1017-311, 312	University Physics I, II and Labs	10
1016-281, 282, 283	Calculus I, II, III	12
	Wellness Education†	0
	Liberal Arts*	8
Second Year		
0309-230	Chemical Process Analysis	4
0309-310	Thermo I: Single Component	4

COURSE		QTR. CR. HRS.
0309-410	Thermo II: Multiple Component	4
0309-320, 420	Fluid Mechanics I, II	8
0309-301	Math Tech for Chemical Engineers	3
1013-431, 432	Organic Chemistry I, II	6
1013-435, 436	Organic Chemistry Lab I, II	2
1016-305	Multiple Variable Calculus	4
1016-306	Differential Equations	4
	Wellness Education†	0
	Liberal Arts*	12
Third Year		
0309-340, 440	Reaction Engineering I, II	8
0309-421	Heat Transfer	4
0309-330	Mass Transfer Operations	4
0309-391	Chemical Engineering Principles Lab	2
0309-302	Math Tech for Chemical Engineers II	2
1017-313	University Physics III and Lab	4
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
0304-344	Materials Science	4
0309-401	System Dynamics and Controls	4
0309-450	Micro-scale Phenomena	4
0309-550	Analysis of Micro-scale Processes	4
0309-392	Chemical Engineering Processes Lab	2
	Professional Technical Elective	4
1014-442	Quantum Chemistry	4
1014-446	Quantum Chemistry Lab	1
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
Fifth Year		
0309-591, 592	Multidisciplinary Design I, II	8
0309-590	Design with Constraint	4
	Professional Technical Electives	8
	Free Electives	12
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**198**

* Please see Liberal Arts General Education Requirements for more information.

† Please see Wellness Education Requirement for more information.

‡ Students are required to complete one Pathways course. Students may choose from Innovation/ Creativity (1720-052), Leadership (1720-053), or Service (1720-054). These courses may be completed in the winter or spring quarter.

Technical Electives

Biomedical

0304-461	Contemporary Issues in Bioengineering
0304-645	Introduction to Biomaterials
0304-646	Biomedical Device Engineering
0304-756	Aerosols in the Respiratory Tract
0303-732	Biomechanics

Alternate Energy Systems

0304-629	Renewable Energy Systems
0304-633	Sustainable Energy Management and the Built Environment
0304-639	Alternative Fuels and Energy
0304-710	Fuel Cell Technology

Environmental

1006-202	Concepts in Environmental Science
1006-203	Environmental Science Field Studies
1001-340	General Ecology
0304-460	Contemporary Issues in Energy and the Environment
1001-471	Freshwater Ecology
1001-567	Environmental Microbiology
1015-520	Environmental Chemistry
1015-521	Atmospheric Chemistry
1015-522	Aquatic Toxicology and Chemistry
0304-633	Sustainable Energy Management and the Built Environment
0303-792	Design for the Environment

Advanced Materials

1029-301	Introduction to Polymer Technology
0304-343	Materials Processing
0304-644	Introduction to Composite Materials
0304-645	Introduction to Biomaterials

Semiconductor Processing

0305-350	IC Technology
0305-643	Thin Film Processes
0305-666	Microlithography Materials and Processes

Computer Engineering, BS

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Program overview

Educational objectives

The computer engineering department has established the following educational objectives for the computer engineering program, which describe the accomplishments of its graduates during the first few years following graduation:

Career focus: Graduates successfully contribute to the professional workforce typically by applying their knowledge in various areas of computer engineering related to hardware, software, and/ or systems.

Graduate study: Many graduates have pursued, are pursuing, or plan to pursue graduate study in computer engineering, related disciplines, or business.

Independent learning: Graduates are engaged in lifelong learning and stay current with advancements in their chosen field through independent learning and/or continuing education.

Professionalism: Graduates conduct themselves in a professional and ethical manner and function as responsible members of society.

The computer engineering program focuses on the design and development of computer and computer-integrated systems, with due consideration to such engineering factors as function, performance, and cost. Computer engineers design and build these systems to meet application requirements with attention to the hardware-software interaction. The program spans topics from formal specifications to heuristic algorithm development; from systems architecture to computer design; from interface electronics to software development, especially real-time applications; and from computer networking to VLSI circuit design and implementation.

As an engineering discipline, computer engineering emphasizes the careful adoption of design methodology and the application of sophisticated engineering tools. The intensive programming and

laboratory work requirements ensure significant experience with modern facilities and up-to-date design tools.

The cooperative education program enables students to apply the principles and techniques of computer engineering to real industrial problems and provides them with a stronger framework on which to build their academic courses. These co-op work periods alternate with academic quarters throughout the last three years of the program.

The faculty members of the computer engineering department are committed to quality engineering education and student success.

Accreditation

The BS program in computer engineering is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700.

Principal field of study

For students matriculated in the interdisciplinary computer engineering program, the principal field of study is defined as all courses taken in the Kate Gleason College of Engineering and the departments of computer science and software engineering.

Curriculum

Computer engineering, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0306-200	Introduction to Computer Engineering	1
0306-201	Freshman Seminar	1
0306-341	Introduction to Digital Systems	4
4003-241	Problem Solving in Computer Science	4
4003-242	Data Structures for Problem Solving	4
4003-243	Object Oriented Programming	4
1016-281, 282, 283	Calculus I, II, III	12
1017-311	University Physics I	5
	Liberal Arts*	12
1720-051	Discovery 1720-050 or	1
1720-052	Pathways‡	1
	Wellness Education†	0
1016-265	Discrete Math I	4
Second Year		
0306-250	Assembly Language Programming	4
0306-351	Hardware Description Languages	4
0301-381	Circuits I with Lab	4
4003-334	Computer Science IV	4
4010-361	Software Engineering	4
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1016-331	Linear Algebra I	4
1017-312, 313	University Physics II, III	9
	Liberal Arts*	8
	Wellness Education†	0
Third Year		
0306-550	Computer Organization	4
0306-561	Digital Systems Design	4
0301-382	Circuits II	4
0301-481	Electronics I	4
0306-381	Applied Programming	4
4003-440	Operating Systems	4
1016-345	Probability and Statistics for Engineers	4
	Free Elective	4
	Cooperative Education (2 quarters)	Co-op

COURSE		QTR. CR. HRS.
Fourth Year		
0306-451	Digital Signal Processing	4
0306-694	Data and Computer Communications	4
0306-560	Interface and Digital Electronics	4
0306-630	Introduction to VLSI Design	4
0306-654 or 656	Senior Design Projects I	4
	Liberal Arts*	8
	Math/Science Elective	4
	Cooperative Education (2 quarters)	Co-op
Fifth Year		
0306-551	Computer Architecture	4
0306-657 or 659	Senior Design Projects II	4
	Professional Electives	8
	Free Electives	8
	Liberal Arts*	8
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**198**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Students are required to complete one Pathways course. Students may choose from Innovation/Creativity (1720-052), Leadership (1720-053), or Service (1720-054). These courses may be completed in the winter or spring quarter.

Professional electives (partial list)

0306-553	Digital Control Systems	
0306-615	Wireless Networks	
0306-620	Design Automation of Digital Systems	
0306-624	High-Performance Architectures	
0306-631	Advanced VLSI Design	
0306-632	Low-Power Design	
0306-663	Real-Time and Embedded Systems	
0306-672	Special Topics in Computer Engineering*	
0306-674	Modeling of Real-Time Systems	
0306-675	Robotics	
0306-676	Robust Control	
0306-710	Network Modeling Design and Simulation	
0306-722	Advanced Computer Architecture	
0306-756	Multiple Processor Systems	
0306-758	Fault Tolerant Digital Systems	
0306-684	Digital Image Processing Algorithms	
0306-685	Computer Vision	
0306-699	Independent Study	

* Special Topics in Computer Engineering (0306-672) includes topics such as: Computational Intelligence, Wireless Communications, Performance Engineering of Real-Time and Embedded Systems.

Approved upper-level courses from other disciplines may be used as professional electives; e.g., courses from electrical engineering, software engineering, and computer science.

Optional concentrations

Students in the computer engineering program may pursue one of the following optional concentrations by selecting the specified courses as electives:

VLSI Design Concentration
Electronics II and two of the following courses as professional electives:

0306-620	Design Automation of Digital Systems	
0306-631	Advanced VLSI Design	
0306-632	Low-Power Design	
0301-726	Mixed Signal IC Design	

Embedded Systems Concentration

0306-663	Real-Time and Embedded Systems and two of the following courses as professional electives:
0306-674	Modeling of Real-Time Systems
0306-672	Special Topics: Performance Engineering of Real-Time and Embedded Systems

Networking Concentration

0306-615	Wireless Networks and one of the following:
0306-710	Network Modeling, Design, and Simulation
0306-672	Special Topics: Wireless Communications

Robotics Concentration

0306-675	Robotics plus the following courses as professional electives:
0306-553	Digital Control Systems
0306-685	Computer Vision
0306-663	Real-Time and Embedded Systems

Image Processing Concentration
The following courses as professional electives:

0306-684	Digital Image Processing Algorithms
0306-685	Computer Vision

and one of the following courses as a free elective:

0306-672	Special Topics: Computational Intelligence
0301-770	Pattern Recognition
0301-803	Digital Video Processing

Electrical Engineering, BS

http://www.rit.edu/kgcoe/eme/

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Program overview

Educational objectives
The electrical engineering faculty, in conjunction with its constituents, has established the following educational objectives for each of its students:

- graduates will practice the profession of engineering using a systems perspective and be able to analyze, design, develop, optimize, and implement complex electrical systems.
- graduates will be able to immediately contribute to industrial, service, and/or government organizations by applying their cooperative educational experiences.
- graduates will be well-prepared for graduate education.
- graduates will possess a broad base of knowledge to draw upon in providing engineering solutions within the appropriate technological, global, societal, ethical, and organizational context.

Electrical engineering addresses the high-technology needs of business and industry by offering a rich academic program that includes analog and digital integrated circuits, digital signal processing, microwave electronics, optical electronics, bioelectronics, radiation and propagation, power electronics, control systems, communications and information theory, circuit theory, computer-aided design, solid-state devices, microelectromechanical systems (MEMs), robotics, and pattern recognition. Our nationally recognized program combines the rigor of theory with the reality of engineering practice.

The program prepares students for exciting careers within the varied electrical engineering and allied disciplines and for positions in business management. Our graduates also have the foundation to pursue advanced study at the most prestigious graduate schools. A degree in electrical engineering is a steppingstone to entering and changing the future.

The curriculum, co-op program, and facilities are designed to accomplish the program's educational objectives. Since the ability to design is an essential part of electrical engineering, the student is presented with challenging design problems in a number of courses, beginning with the first hands-on course, Electrical Engineering Practicum (0301-205), in the freshman year.

To strengthen students' applied knowledge in electrical engineering, laboratories are an integral part of many courses. The department offers a number of classes in studio-style lecture labs, where the instructor presents the lecture in a fully instrumented room that allows immediate observation and implementation of important engineering ideas. Many of our alumni report that the college's facilities are comparable to the best in the industry.

The highlight of the applied engineering experience is the senior project. Students work on a challenging project under the tutelage of an experienced faculty adviser. While experiencing the satisfaction of completing an interesting project and exploring the latest in technology, students develop engineering management and project organization skills. They 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.

The first two years of the curriculum are devoted to establishing a foundation in mathematics and physical science that is essential to the study of electrical engineering. In other courses, students learn about electrical engineering principles such as circuits and digital systems. The practicum courses introduce students to electrical engineering practice and computer-aided design (CAD) tools that are used throughout the five-year program.

In the third and fourth years, students build on this foundation and 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.

During the fifth year, students specialize in an area of their professional interest. They complete their capstone engineering project, the senior design project, as part of the graduation requirements.

Accreditation
The BS in electrical engineering program is accredited by the EAC Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700.

Curriculum

Electrical engineering, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0301-205	Electrical Engineering Freshman Practicum	1
0301-240	Digital Systems	4
1011-208	College Chemistry I	4
1016-281, 282, 283	Calculus I, II, III	12
1017-311, 312	University Physics I, II	10
	Liberal Arts*	20
	Wellness Education†	0
1720-050, 051	Discovery	1
1720-052	Pathways‡	1
Second Year		
0301-360	Semiconductor Devices	4
0301-365	Microcomputer Systems	4
0301-381, 382	Circuits I, II with Lab	8
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1016-328	Engineering Mathematics	4
1017-313	University Physics III	4
Choose one of the following courses:		4
0301-370	Restricted Science Elective	
1017-314	Modern Physics I	
	Liberal Arts*	4
	Free Elective	4
0301-344	Matlab and C for Electrical Engineers	3
Third Year		
0301-453, 554	Linear Systems I, II	8
0301-473, 474	Electromagnetic Fields I, II	9
0301-481, 482	Electronics I, II with Lab	8
1016-420	Complex Variables	4
	Free Elective	4
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
1016-345	Probability and Statistics for Engineers	4
0301-347	Computer Architecture	4
0301-514	Control Systems Design	5
0301-534	Communication Systems	4
0301-545	Digital Electronics	4
	Free Elective	4
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
0301-497	Individual Design	3
Fifth Year		
0301-531	Mechatronics	4
	Professional Electives	12
0301-697, 698	Senior Design Project I, II	8
	Liberal Arts*	4
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**197**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Students are required to complete one Pathways course. Students may choose from Innovation/Creativity (1720-052), Leadership (1720-053), or Service (1720-054). These courses may be completed in the winter or spring quarter.

Professional electives

Each of the listed professional electives includes significant design experience. For convenience, the courses have been grouped by interest areas. Some courses apply to more than one area.

Electromagnetic Fields and Optics

0301-601	Modern Optics for Engineers	

Control Systems

0301-615	State Space Control
0301-636	Biorobotics/Cybernetics
0301-647	Artificial Intelligence
0301-685	Principles of Robotics

Communications

0301-677	Digital Filters and Signal Processing
0301-692	Communication Networks
0301-693	Digital Data Communications

Signal Processing

0301-677	Digital Filters and Signal Processing
0301-679	Analog Filter Design

Digital and Computer Systems

0301-650	Design of Digital Systems
0301-651	Physical Implementation
0301-655	Microcomputer Software I
0301-664	Embedded Microcontroller Systems

Devices and Integrated Circuits

0301-610	Analog Electronic Design
0301-612	Semiconductor Devices III
0301-646	Power Electronics
0301-650	Design of Digital Systems
0301-679	Analog Filter Design

Biomedical

0301-630	Biomedical Instrumentation
0301-631	Biomedical Sensors and Transducers I
0301-632	Fundamental Electrophysiology
0301-633	Biomedical Signal Processing

MEMS

0301-686	Microelectromechanical Devices
0301-688	MEMS System Evaluation

Robotics

0301-636	Biorobotics/Cybernetics
0301-647	Artificial Intel Explore
0301-685	Principles of Robotics

BS in electrical engineering with computer engineering option

The computer engineering concentration is ideal for those who would like to incorporate the skills required in designing modern computing systems. Students in this program meet all the requirements for the BS degree in electrical engineering and receive instruction in areas ranging from C programming, object-oriented programming, assembly language, microprocessor interfacing, and logic design to data structures and computer operating systems.

Students pursuing a BS degree in electrical engineering with the computer engineering option must meet all the requirements of the BSEE degree with certain specifications.

The program includes the following computer-specific courses:
- 0301-240 Digital Systems
- 0301-365 Microcomputer Systems

- 0301-346 Advanced Programming for Engineers
- 0301-347 Computer Architecture
- 4003-440 Operating Systems (or equivalent)

One of the two required professional electives must be chosen from the following:
- 0301-650 Design of Digital Systems
- 0301-651 Physical Implementation of ICs
- 0301-655 Microcomputer Software I
- 0301-664 Embedded Microcontroller

BS in electrical engineering with biomedical engineering option

Biomedical engineering plays a crucial role in understanding the fundamental principles of human life sciences, especially those related to health care and clinical medicine. Incorporating these findings and principles into practical medical systems and devices requires the expertise of professionals trained in core engineering disciplines such as electrical engineering. The biomedical engineering option is designed to provide students with the necessary expertise in the analysis and design of devices and systems used in sensing, control, and analysis of electrical signals within human biological processes. Biomedical engineering is expanding into the nano level of tissue, cell, molecule, and gene studies as well as nanotechnology research. The focus of the option is the application of the principles of electrical engineering and related disciplines to the fields of both biology and medicine in clinical and research settings.

The biomedical engineering option augments the foundation of the electrical engineering curriculum with two courses from the College of Science and two option-specific electrical engineering courses as outlined below.

All courses in the option have a strong design emphasis and incorporate project-oriented assignments to allow students an opportunity to investigate and demonstrate concepts discussed in class. This option culminates in a biomedical, multidisciplinary, capstone senior design project. Examples of such projects include integrated biosensor design and fabrication, clinical and laboratory instrumentation design, telemedicine, and telemetry applications and equipment, including Internet-enabled monitoring and health care delivery systems. These projects typically involve university-wide interaction with departments in the Kate Gleason College, the College of Science, the College of Imaging Arts and Sciences, and the B. Thomas Golisano College of Computing and Information Sciences, as well as a close affiliation with Rochester-area hospitals.

Students pursuing a BS in electrical engineering with the biomedical engineering option must meet all the requirements of the BSEE degree with certain specifications.

The program includes the following biomedical-specific courses:
- 0301-630 Biomedical Instrumentation
- 0301-632 Fundamental Electrophysiology
- 1026-355 Physiology and Anatomy I
- 1026-365 Physiology and Anatomy II

One of these required professional electives must be chosen:
- 0301-631 Biomedical Sensors and Transducers I
- 0301-633 Biomedical Signal Processing

BS in electrical engineering with robotics option

The robotics option is ideal for those who want to incorporate the theoretical and practical skills required in designing robots and robotics devices. Robots and robotic devices have become a part of our daily lives. Students in this option complete curriculum in areas from advanced programming, robotics systems, principles of robotics, and advanced robotics. Students are introduced to robotics systems in their third year and design components of a mobile robot. In the fourth year, they study principles of robotics covering kinematics and dynamics of robotics manipulators, mobile robots, locomotion types, and complete experiments using various arm and mobile robots. In the final year, they take an advanced robotics course to study dynamics of manipulators, dynamics of mobile robots with advance locomotion techniques, and path planning.

Students pursuing a BS degree in electrical engineering with the robotics engineering option must meet all the requirements of the BS degree with certain specifications.

The program includes the following robotics-specific courses:

0301-346	Advanced Programming for Engineers
0301-585	Robotics Systems
0301-685	Principles of Robotics
One of the two required professional electives must be:	
0301-895	Advanced Robotics

Accelerated dual degree option

An accelerated dual degree (BS/MS) option is available for electrical engineering students. Enrollment in this program requires the successful completion of at least 232 quarter credit hours. After completing this requirement, the student is awarded the BS and MS degrees simultaneously. Students may apply to this program in the second quarter of their second year, providing that a minimum cumulative grade point average of 3.4 has been obtained at the end of the previous quarter. Although admission requirements are stricter for this program, graduation requirements are consistent with university policies.

The first three years of the program are identical for the BSEE and the combined BS/MS program, with the exception of the work period between the second and third years being used to earn early cooperative education credit. Additional information can be obtained from the department of electrical engineering. A typical fourth- and fifth-year program sequence follows.

Electrical engineering, BS/MS option, typical course sequence

COURSE		QTR. CR. HRS.
First Year-Third Year†		
		133
Fourth Year		
1016-314	Engineering Statistics	4
0301-347	Computer Architecture	4
	Liberal Arts*	4
0301-534	Communication Systems	5
0301-703	Matrix Methods in Electrical Engineering	4
0301-514	Control Systems Design	5
0301-545	Digital Electronics	4
0301-702	Random Signals and Noise	4
	Professional Electives	12
0301-890	Thesis	2
	Cooperative Education (1 quarter)	Co-op
Fifth Year		

COURSE		QTR. CR. HRS.
	Graduate Courses	20
0301-531	Mechatronics	4
	Professional Elective	4
0301-697, 698	Senior Design I, II	8
	Liberal Arts*	8
0301-890	Thesis	7
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**232**

* Please see Liberal Arts General Education Requirements for more information.
† The first three years of the program are identical to the first three years of the BS program in electrical engineering.
Note: Two of the professional electives will be counted twice, once toward the BS degree and once toward the MS degree. The free elective will be replaced by a graduate course for the BSEE.

Accelerated dual degree options

BS/MS premedical/biomedical

This option prepares the student for a career in electrical engineering/medical science. Upon successful completion, students will receive a BS and MS degree in electrical engineering and be prepared to apply to medical school. This is a rigorous academic curriculum, and the student must maintain very high academic standing to be eligible for admission to medical school. Students must meet with a premed adviser to understand the program requirements.

BS/MS analog and mixed signal

The analog and mixed-signal BS/MS accelerated dual degree option in electrical engineering introduces the student to a broad range of subject material considered essential for a career in analog circuit design. It emphasizes the actual design and fabrication of complex analog and mixed-signal integrated circuits. Digital and analog signal processing principles are presented in a coordinated design environment.

Industrial Engineering, BS

http://www.rit.edu/kgcoe/ise/

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Program overview

Educational objectives

The industrial and systems engineering faculty, in conjunction with its constituents, has established the following educational objectives for the industrial and systems engineering program:

Systems integrators—Graduates will draw upon broad knowledge to develop integrated systems-based engineering solutions that include the consideration of realistic constraints within contemporary global, societal, and organizational contexts.

Lifelong learners—Graduates will develop engineering solutions using the skills and knowledge acquired through formal education and training, independent inquiry, and professional development.

Graduate education—Graduates will successfully pursue graduate degrees.

Engineering professionals—Graduates will work independently as well as collaboratively with others and demonstrate leadership, accountability, initiative, and ethical and social responsibility.

With rapidly changing work environments, students need a well-rounded education that will allow them to apply engineering principles to new situations.

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, 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 computer work involves developing applied 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, medicine, law, and teaching.

Because of the flexible nature of the program, the industrial engineering student can gain breadth of knowledge in many different areas of industrial engineering, including, but not limited to, information systems, lean production, quality, distribution/logistics, and sustainable design and development. Students may choose free and professional electives for this purpose. The industrial and systems engineering faculty is committed to high-quality engineering education as well as the program's educational objectives.

The industrial engineering curriculum 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 production processes that are applied to solve the challenges presented by the global environment and economy of today. The curriculum stresses the application of contemporary tools and techniques in solving engineering problems.

As described by the Institute of Industrial Engineers on the organization's website:

"Industrial engineering (IE) is about choices. IE gives you the opportunity to work in a variety of businesses. The most distinctive aspect of industrial engineering is the flexibility that it offers: shortening a rollercoaster line, streamlining an operating room in a hospital, distributing products worldwide, or manufacturing superior products.

"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 function as 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. Most important of all, industrial engineers save companies money. This is why more and more companies are hiring industrial engineers and then promoting them into management positions."

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.

Accreditation

The BS in industrial engineering program is accredited by the EAC Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700.

Curriculum

Industrial engineering, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0303-201	Fundamentals of Industrial Engineering	4
0303-204	Computer Tools for Increased Productivity	2
1011-208	College Chemistry	4
1016-281, 282, 283	Calculus I, II, III	12
1017-311, 312	University Physics I, II	10
0303-343	Materials Processing	3
	Liberal Arts*	16
0303-051	Discovery Industrial Engineering	1
1720-052	Pathways‡	1
	Wellness Education†	0
Second Year		
0304-331	Mechanics I	3
0304-332	Mechanics II	3
1016-305	Multivariable Calculus	4
0303-302	Computing for Engineers	4
1016-306	Differential Equations	4
1016-331	Matrix Algebra	4
1017-313	University Physics III	4
1004-212	Human Biology II	3
0304-344	Materials Science	4
	Free Elective	4
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
	Liberal Arts*	4
0303-520	Engineering Economy	4
0303-401	Introduction to Operations Research	4
0307-361, 362	Probability and Statistics I, II	8
0303-415	Ergonomics	4
0303-481	Engineering Management	4
0303-422	Systems and Facilities Planning	4
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
0303-510	Applied Statistical Quality Control	4
0303-511	Applied Linear Regression Analysis	4
0303-402	Production Control	4
0303-503	Systems Simulation	4
0303-516	Human Factors	4
0303-526	Design and Analysis of Production Systems	4
	Professional Elective	4
	Liberal Arts*	4
	Cooperative Education (2 quarters)	Co-op
Fifth Year		
0303-630	Advanced Systems Integration	4
0303-560, 561	Multidisciplinary Senior Design I, II	8
	Professional Electives	12
	Free Electives	8
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**198**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Students are required to complete one Pathways course. Students may choose from Innovation/Creativity (1720-052), Leadership (1720-053), or Service (1720-054). These courses may be completed in the winter or spring quarter.

Professional electives (partial list)

0303-704	Logistics Management
0303-728	Production Systems Management
0303-732	Biomechanics
0303-734	Safety Engineering
0303-758	Design of Experiments
0303-760	Product and Process Development and Design
0303-761	Rapid Prototyping
0303-790	Fundamentals of Sustainable Design
0303-791	Lifecycle Assessment and Costing
0303-792	Design for the Environment

A full listing of electives can be found at www.rit.edu/kgcoe/ise. Graduate-level courses, as well as courses from the other engineering disciplines, may be used as professional electives with the permission of the adviser and course instructor. (See the *Graduate Bulletin* for descriptions.)

Accelerated dual degree options

The department offers accelerated dual degree (BS/MS and BS/ME) options, where select students may complete a BS and an MS or ME in industrial engineering in five years. An arrangement with the E. Philip Saunders College of Business allows for an accelerated BS/MBA option. For more information, contact the department or visit its website.

Additional information

Facilities

The industrial and systems engineering department is located in the James E. Gleason Building and houses several state-of-the-art laboratories, including the Brinkman Machine Tools and Manufacturing Lab, the Metrology and Rapid Prototyping Lab, the Toyota Production Systems Lab, the Human Performance Lab, the Advanced Systems Integration Lab, the Sustainable Engineering Research Group (SERG) Lab, and the Print Research and Image Systems Modeling (PRISM) Lab. Ample computing facilities reside within each of these specialized labs, as well as a dedicated PC computer lab. These labs offer an extensive library of software to support industrial engineering course work, project work, and research, including conventional word processing, spreadsheet, and presentation applications (e.g., Microsoft Office), database management (e.g., Microsoft ACCESS), data acquisition (e.g., Lab View), statistical analysis (e.g., Minitab, SAS), facilities layout (e.g., AutoCad, Factory Flow, Factory Plan, LayoutIQ), manufacturing (e.g., MasterCam Cambridge Engineering Selector Software), optimization (e.g., ILOG OPL-CPLEX, LINDO, KNITRO, AMPL, GuROBI, Mathematica), systems simulation software (e.g., Solver, Arena, Promodel), and lifecycle assessment and costing tools (e.g., SimaPro, CES Eco-Audit).

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 companies, including Boeing, IBM, Toyota, Xerox, Intel, General Electric, Hershey, Walt Disney World, Ortho-McNeil Pharmaceutical, Lockheed Martin, and Wegmans, 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

Mechanical Engineering, BS

http://www.rit.edu/kgcoe/mechanical/

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Program overview

Educational objectives
The objectives of the mechanical engineering program are to prepare graduates to:
- practice mechanical engineering in support of the design of engineered systems through the application of the fundamental knowledge, skills, and tools of mechanical engineering.
- enhance their skills through formal education and training, independent inquiry, and professional development.
- work independently as well as collaboratively with others, while demonstrating the professional and ethical responsibilities of the engineering profession.
- successfully pursue graduate degrees at the master's and/or doctoral levels, should they choose.

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 the areas of 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.

Students have an opportunity to participate in regional and national design competitions such as the Formula SAE Autosports Competition team, the SAE Aerodesign Club, 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.

Curriculum

The program 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, physics, chemistry, 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 technical electives includes a significant design project. In the fifth year, each student is required to complete the capstone design courses, Senior Design I and II (0305-630, 631).

The liberal arts component of the mechanical engineering program consists of 36 credit hours of study in accordance with the university's liberal arts general education requirements. In the third year, all students must demonstrate writing competency in the English language by successfully completing a college writing exercise evaluated by faculty from the Institute Writing Committee. For some students, this may require work with the Academic Support Center, the English Language Center, or additional course work in the College of Liberal Arts.

Accreditation
The BS in mechanical engineering program is accredited by the EAC Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700.

Mechanical engineering, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1720-050, 051	Discovery	1
1720-052	Pathways‡	1
	Students will be enrolled in one of the two calculus sequences below:	
1016-281, 282, 283	Calculus I, II, III	12
1016-271, 272, 273	Calculus A, B, C	
1011-208	Chemistry I	4
0304-343	Materials Processing	3
	Liberal Arts*	12
1017-311, 312	University Physics I, II	10
0304-214	Engineering Design Graphics	2
0304-280	Measurements, Instrumentation, Controls Lab	2
0304-342	Problem Solving with Computers	3
	Wellness Education†	0
Second Year		
	Science Electives	8
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1016-318	Matrices and Boundary Value Problems	4
1017-313	University Physics III	4
0304-413	Thermodynamics	4
0304-415	Fluid Mechanics	4
0304-336	Statics	4
0304-347	Mechanics of Materials	4
0304-348	Mechanics of Materials Lab	1
0304-359	Dynamics	5
	Liberal Arts*	4
	Wellness Education†	0
Third Year		
1016-314	Engineering Statistics	4
0304-344	Materials Science	4
0304-437	Design of Machine Elements	4
0304-440	Numerical Methods	4
0304-514	Heat Transfer	4
0304-416	Thermal Fluids Lab I	1
0301-381	Circuits I	4
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
0304-518	Advanced Computational Techniques	4
	Liberal Arts*	4
0304-543	Systems Dynamics	5
0304-550	Transport Phenomena	4
0304-551	Thermal Fluids Lab II	1
	Cooperative Education (3 quarters)	Co-op
Fifth Year		
	Technical Electives	16
	Free Electives	12
	Liberal Arts*	8
0304-630, 631	Senior Design I, II	8
Total Quarter Credit Hours		**195**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Students are required to complete one Pathways course. Students may choose from Innovation/Creativity (1720-052), Leadership (1720-053), or Service (1720-054). These courses may be completed in the winter or spring quarter.

Elective courses

Technical/Graduate Electives

0304-701	Research Methods (Primarily for BS/MS Students)
0304-730	Design Project Management (Primarily for BS/ME Students)

General Technical Electives

0303-620	Engineering Economy
0304-610	Topics in Mechanical Engineering Design
0304-615	Robotics
0304-618	Computer-Aided Engineering
0304-635	Heat Transfer II
0304-638	Design of Machine Systems
0304-652	Turbomachinery
0304-672	Dynamics of Machinery
0304-658	Engineering Vibrations
0304-745	Micro/Nano Characterization of Materials

Aerospace Technical Electives

0304-644	Introduction to Composite Materials
0304-643	Control Systems
0304-671	Aerostructures
0304-678	Propulsion
0304-682	Flight Dynamics
0304-683	Orbital Mechanics
0304-743	Intermediate Control Systems
0304-754	Fundamentals of Fatigue and Fracture Mechanics

Automotive Technical Electives

0304-622	High Performance Vehicle Engineering
0304-623	Powertrain Systems and Design
0304-624	Vehicle Dynamics
0304-640	Internal Combustion Engines
0304-643	Control Systems
0304-710	Fuel Cell Technology
0304-752	Fundamentals of Tribology and Lubrication
0303-801	Design for Manufacture

Bioengineering Technical Electives

0304-645	Biomaterials
0304-646	Biomedical Device Engineering
0304-756	Aerosols in the Respiratory Tract
0303-732	Biomechanics

Energy and Environment Technical Electives

0304-629	Renewable Energy Systems
0304-633	Sustainable Energy Management and the Built Environment
0304-639	Alternative Fuels and Energy Efficiency for Transportation
0304-640	Internal Combustion Engines
0304-643	Controls Systems
0304-660	Refrigeration and Air Conditioning
0304-680	Advanced Thermodynamics
0304-710	Fuel Cell Technology

Additional technical electives are available outside of the department. Students wishing to complete external technical courses may request departmental approval.

A number of free electives are also available. These courses may NOT be used as technical electives:

0303-520	Engineering Economy	
0304-540	Introduction to Automotive Design and Manufacturing	
0304-560	Introduction to Aerospace Engineering	
0304-461	Contemporary Issues in Bioengineering	
0304-460	Contemporary Issues in Energy and the Environment	

Options

Students may select a number of course options to gain specialized study in a particular discipline of mechanical engineering. Options include aerospace engineering, automotive engineering, bioengineering, and energy and environment. Participation in one of these options is not required. However, they are offered for those students who seek to pursue a career in one of these specialized fields of mechanical engineering. Students must maintain a GPA of at least 2.0 within the option sequence of courses to remain in the option. The degree requires students to complete four technical electives and three free electives.

Students may elect to complete the program without an option and instead customize their academic study in support of their career plans. The mechanical engineering program is relatively flexible and allows students to pursue options, minors, and even multiple degrees.

Aerospace engineering

The aerospace engineering option allows for specialized study in the engineering aspects of air- and space-borne vehicles and starts with a course introducing students to the aerospace field. The sequence starts in the third year with Introduction to Aerospace Engineering (0304-560), which counts as a free elective. Students who elect the aerospace option must take Aerodynamics (0304-575) in place of Transport Phenomena (0304-550). Students then select three technical electives from courses such as Aerospace Structures (0304-671), Propulsion (0304-678), Introduction to Composite Materials (0304-644), Fundamentals of Fatigue and Fracture Mechanics (0304-754), Control Systems (0304-643), Flight Dynamics (0304-682), and Orbital Mechanics (0304-683. In addition, students choosing this option are expected to work on an aerospace engineering design project in Senior Design I and II (0304-630, 631) and to pursue co-op employment in a related field.

Automotive engineering

The automotive engineering option offers a series of specialized technical and free elective courses during the fourth and fifth years that provides an introduction to vehicle power plants, dynamics, and control systems. The sequence starts in the third year with Introduction to Auto Design and Manufacturing (0304-540), which counts as a free elective. Students then select three technical electives from courses such as High Performance Vehicle Engineering (0304-622), Powertrain Systems and Design (0304-623), Vehicle Dynamics (0304-624), Design of Machine Systems (0304-638), Internal Combustion Engines (0304-640), Control Systems (0304-643), Fundamentals of Tribology and Lubrication (0304-752), Fuel Cell Technology (0304-710), and Design for Manufacture (0303-801). In addition, students choosing this concentration are expected to work on an automotive senior design project in Senior Design I and II (0304-630, 631) and to pursue co-op employment in a related field.

Bioengineering

The bioengineering option provides an introduction to engineering sciences and design based upon a foundation of biological sciences. The course sequence starts with a biological science elective, which counts as a free elective. Students then select three technical electives from courses such as Contemporary Issues in Bioengineering (0304-461), and three technical electives chosen from a wide variety of offerings, such as Aerosols in the Respiratory Tract (0304-756), Biomechanics (0304-732), Control Systems (0304-643), Introduction to Biomaterials (0304-645), and Biomedical Device Engineering (0304-646). Students choosing this option are expected to work on a bioengineering design project in Senior Design I and II (0304-630, 631) and to pursue co-op employment in a related field.

Energy and environment

This option consists of electives that provide students with exposure to a wide range of opportunities and careers associated with energy-intensive systems and how they relate to the environment. This option increases the number of opportunities students have for careers in the fields of building energy systems, alternative and renewable energy, and direct energy conversion. The sequence starts in the third year with Contemporary Issues in Energy and the Environment (0304-460)), which counts as a free elective. Students then select three technical electives from courses such as Renewable Energy Systems (0304-629), Sustainable Energy Management (0304-633), Alternative Fuels and Energy Efficiency (0304-639), Advanced Thermodynamics (0304-680), Fuel Cell Technology (0304-710), and Heating, Refrigeration and Air Conditioning (0304-660). Students choosing this option are expected to work on an energy systems design project in Senior Design I and II (0304-630, 631) and to pursue co-op employment in a related field.

Accelerated dual degree options

Three accelerated dual degree options offer outstanding mechanical engineering students an opportunity to earn bachelor of science and master of science degrees within approximately five years. Two dual degree options are available—a bachelor of science/master of engineering degree (BS/ME), which has a strong career focus for students who plan to seek employment immediately after graduation; and a bachelor of science/master of science degree (BS/MS), which has a strong research focus and is primarily directed toward students who plan to continue their education in the pursuit of a doctoral degree. All students enrolled in the BS/MS options are required to complete a graduate thesis and conduct scholarly research.

The ME department also offers a dual degree option enabling students to earn a BS in mechanical engineering and an MS in science, technology, and public policy. This dual degree option has a public policy research focus and is designed for students interested in using their technical preparation as an engineer to help shape future policy decisions. It is a cliche that technology has become a major driver, perhaps the most important driver, of social, political, and economic change. It follows then that engineers will increasingly shape the direction of those changes, and it is important that engineers understand how their future actions directly and indirectly affect all of our lives.

A student enrolled in the dual degree option is required to successfully complete 230-235 quarter credit hours, after which the BS and MS or ME degrees are awarded simultaneously. A student

may apply for admission to this program in the winter quarter of the second year. A transfer student may apply after completing one quarter of study at RIT. Admission is based on a cumulative grade-point average of at least 3.4, letters of recommendation from the faculty, and a letter of application from the student. Students are admitted first to the BS/ME option but may change to the BS/MS option upon approval of a thesis proposal. While in the program, students are required to maintain a cumulative grade-point average of at least 3.2.

Microelectronic Engineering, BS

http://www.rit.edu/kgcoe/electrical

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Program overview

Semiconductor microelectronics technology remains important for the world economy. The semiconductor industry is a star performer in U.S. manufacturing. Fostering a vigorous semiconductor industry in our country is important for the nation's economic growth, long-term security, and the preparation and maintenance of a capable high-tech workforce. The Kate Gleason College of Engineering developed the first bachelor of science degree program in microelectronic engineering in the U.S., and the college continues to provide highly educated and skilled engineers for the semiconductor industry.

Educational objectives

Our constituents include students, graduate schools, faculty, and the semiconductor industry. The educational objectives of the microelectronic engineering program are to produce graduates who have the following skills or characteristics:

- A sound knowledge of the fundamental scientific principles involved in the operation, design, and fabrication of integrated circuits.
- A comprehensive understanding of relevant technologies such as integrated circuit process integration and manufacturing. This includes microlithography and the application of engineering principles to the design and development of current and future semiconductor technologies.
- A professional approach to problem solving, using analytical, academic, and communication skills effectively, with special emphasis on working in teams.
- An enthusiasm for learning and the continuous improvement of skills throughout one's career, exemplified by learning about emerging technologies and adapting to and accepting change within the field.
- A desire to achieve leadership positions in industry or academia.
- A breadth of knowledge, including the multidisciplinary nature of microelectronic engineering as well as the broad social, ethical, safety, and environmental issues within which engineering is practiced.

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 chemistries 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 program 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.

Accreditation

The BS in microelectronic engineering program is accredited by the EAC Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700.

Curriculum

The curriculum begins with introductory courses in microelectronic engineering and microlithography (micropatterning) for integrated circuits. The first two years of the program build a solid foundation in mathematics, physics, and chemistry. The fundamentals of statistics and their applications in the design of experiments, semiconductor device physics and operation, and integrated circuit technology are covered in the second year. This prepares students for their first cooperative education experience. 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 VLSI design, optics, microlithography systems and materials, semiconductor processing, professional electives, and a two-quarter capstone senior project. In the capstone course, students propose and conduct individual research/design projects and present their work at the Annual Microelectronic Engineering Conference, which is organized by the department and well-attended by industrial representatives.

A choice of professional electives and the senior project offer students an opportunity to build a concentration such as advanced CMOS, VLSI chip design, analog circuit design, electronic materials science, microelectromechanical systems (MEMS), or nanotechnology within this unique interdisciplinary program. Three free elective courses are built into the program to allow students to take a minor program in any other discipline.

Computing skills are necessary to design, model, simulate, and predict processes and device behavior that are vital to manufacturing. A comprehensive knowledge of statistics is required to manipulate data and process control. As the devices shrink in size, approaching the nanoscale regime where molecular and atomic scale phenomena come into play, elements of quantum mechanics become important.

Important issues such as the technology road map, ethics, societal impact, and global perspectives are built into the program beginning with first-year courses. The program is laid out in a way that keeps students connected with their home department throughout the course of study.

Students gain hands-on experience in the design, fabrication, and testing of 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 the best in the nation. At present, the program is supported by a complete 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 Canon i-line and GCA g-line wafer steppers, and a Perkin Elmer MEBES III electron beam mask writer.

Students participate in the required co-op portion of the program after completing their second year of study. Microelectronic engineering co-op students work for many of the major integrated circuits manufacturers across the United States. Upon graduation, they are well-prepared to enter the industry or graduate school. This program also prepares students to work in emerging technologies such as nanotechnology, microelectromechanical systems, and microsystems.

With the worldwide semiconductor industry growing at an astounding pace, RIT graduates are a valuable resource to the industry. This program offers students an unparalleled opportunity to prepare for professional challenges and success in one of the leading modern areas of engineering. Faculty committed to quality engineering education, 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.

Microelectronic engineering, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0305-201	Introduction to Microelectronics	4
0305-221	Introduction to Micro/Nano Lithography	4
1011-208	College Chemistry I	4
1016-281, 282, 283	Calculus I, II, III	12
1017-311, 312	University Physics I, II	10
0306-341	Introduction to Digital Systems	4
	Liberal Arts*	12
	Wellness Education†	0
1720-050, 051	Discovery	1
1720-052	Pathways‡	1
Second Year		
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1016-328	Engineering Mathematics	4
1017-313	University Physics III	4
1017-314	Modern Physics	4
0301-344	Matlab and C	3
0305-460	Semiconductor Devices I	4
0307-315	Statistics for Engineers	4
0305-320	Design of Experiments	4
0305-350	Integrated Circuit Technology	4
0301-381	Circuits	4
	Free Elective	4
	Wellness Education†	0

COURSE		QTR. CR. HRS.
Third Year		
0301-382	Circuit Analysis II	4
0305-515	Principles of Electromagnetic Fields	4
	Free Elective	4
0301-481, 482	Electronics I, II with Labs	8
0305-560	Semiconductor Devices II	4
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
Fourth Year		
0305-525	Optics for Microelectronics	4
0305-632	Silicon Processes	4
0305-563, 573	Microlithography Systems with Lab	4
0305-520	VLSI Design	4
0305-643	Thin Film Processes	4
0301-453	Linear Systems	4
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
Fifth Year		
0305-650	CMOS Processing Lab	4
0305-666, 676	Microlithography Materials and Processes with Lab	4
0305-681, 691	Senior Design Project I, II	6
	Two Professional Electives	8
	Free Elective	4
	Liberal Arts*	8
	Cooperative Education (1 quarter)	Co-op
Total Quarter Credit Hours		**197**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.
‡ Students are required to complete one Pathways course. Students may choose from Innovation/Creativity (1720-052), Leadership (1720-053), or Service (1720-054). These courses may be completed in the winter or spring quarter.

Professional electives (partial list)

0305-704	Semiconductor Process and Device Modeling	
0305-705	Quantum and Solid State Physics for Nanostructures	
0305-706	SiGe and SOI Devices and Technology	
0305-707	Nanoscale CMOS and Beyond	
0305-714	Micro/Nano Characterization	
0305-732	Microelectronics Manufacturing II	
0305-830	Metrology for Yield and Failure Analysis	
0306-561	Digital System Design	
0306-631	Advanced VLSI Design	
0301-726	Analog IC Design	
0301-730	Advanced Analog IC Design	
0305-870	Microelectromechanical Systems	

Graduate-level courses from other related engineering, mathematics, or science disciplines may be used as professional electives with the permission of the academic adviser and course instructor. (See the *Graduate Bulletin* for descriptions.)

BS/MS microelectronic engineering and materials science
A cross-disciplinary dual degree BS/MS degree option between two colleges is available in the microelectronic engineering program. Students may work to earn a BS in microelectronic engineering from the Kate Gleason College of Engineering and an MS in materials science and engineering from the College of Science.

This unique program was inspired by trends involving convergence of advanced materials with nanofabrication and microelectronics in modern microdevices and systems. The five-year option requires the successful completion of 225 credits, with a minimum of 45 graduate course credits and a graduate thesis. One co-op quarter is substituted for the graduate course work to make it an accelerated five-year option requiring a minimum of 13 quarters of academic course work. A student may apply for admission to this option in the fall quarter of the third year with a grade-point average of at least 3.0 at the end of the previous quarter.

Microelectronic engineering materials science and engineering, BS/MS option, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Same as BS (Microelectronic Engineering)	52
Second Year		
	Same as BS (Microelectronic Engineering)	49
Third Year		
	Same as BS (Microelectronic Engineering)	32
Fourth Year		
0305-525	Optics for Microelectronics	4
0305-563, 573	Microlithography Systems and Lab	4
0305-632	Silicon Processes	4
0305-703	Thin Film Processes	4
0305-520	VLSI Design	4
	Free Elective	4
	Liberal Arts*	8
	Cooperative Education (1 quarter)	Co-op
1028-701	Introduction to Materials Science	4
1028-704	Introduction to Theoretical Methods	4
1028-705	Introduction to Experimental Techniques	4
	MSE Graduate Elective	4
Fifth Year		
0305-650	CMOS Processing Lab	4
0305-666, 721	Microlithography Materials and Processes with Lab	3
0305-381, 691	Senior Design Project I, II	6
	Free Elective	4
	Liberal Arts*	8
1028-703	Solid State Science	4
1028-702	Introduction to Polymer Science	4
	MSE Graduate Elective	4
1028-879	MSE Research	8
1028-890	MSE Seminar/Defense	1
Total Quarter Credit Hours		**227**

* Please see Liberal Arts General Education Requirements for more information.

Engineering Exploration, Undeclared

http://www.rit.edu/kgcoe/undergrad/undeclared

Program overview

The engineering exploration option is for students who prefer additional time in which to decide their engineering major. Students may choose a major at the end of the fall, winter, or spring quarter of their first year.

Curriculum

During their first year students take the foundation courses required by all the engineering disciplines. Course work taken as an engineering exploration student will transfer into all engineering programs without any loss of credits toward graduation.

During the fall quarter, engineering exploration students take a one-credit course, Introduction to Engineering (0302-210). This course provides an overview of all seven programs plus the opportunity to learn about the course of study in each program, career opportunities in each of the engineering disciplines and an introduction to the faculty and students of each program. Other career-oriented activities available during the freshman year include participating in small group discussions with faculty and other students, observing classroom presentations of senior engineering design projects, exploring engineering laboratory facilities, and consulting one-on-one with an academic adviser regarding engineering courses.

Engineering exploration option, typical first-year schedule

COURSE		QTR. CR. HRS.
Fall		
1016-281	Calculus I	4
1011-208	College Chemistry	4
0302-210	Introduction to Engineering	1
	Liberal Arts*	8
1720-050, 051	Discovery	1
Winter		
1016-282	Calculus II	4
	Engineering class of interest	4
1017-311	University Physics I	4
	Liberal Arts*	4
	Pathways course‡	1
Spring		
1016-283	Calculus III	4
	Engineering class of interest	4
1017-312	University Physics II	4
	Liberal Arts*	4
	Wellness Education†	0
Total Quarter Credit Hours		**51**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Students are required to complete one Pathways course. Students may choose from Innovation/Creativity (1720-052), Leadership (1720-053), or Service (1720-054). These courses may be completed in the winter or spring quarter.

Kate Gleason College of Engineering

Harvey J. Palmer, BS, University of Rochester; Ph.D., University of Washington, PE—Dean; Professor

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

Chemical and Biomedical Engineering

Steven J. Weinstein, BS, University of Rochester; MS, Ph.D., University of Pennsylvania—Department Head; Professor

Nzola DeMagalhães, BS (Biological Sciences), BS (Chemistry), BA, MS, Ph.D., University of California, Irvine—Assistant Professor

Karuna Koppula, B. Tech, Andhra University (India); MS, University of New Hampshire; Ph.D., Michigan State University—Visiting Assistant Professor

Brian J. Landi, BS, MS, Ph.D., Rochester Institute of Technology—Assistant Professor

Harvey J. Palmer, BS, University of Rochester; Ph.D., University of Washington, PE—Dean; Professor

Daniel B. Phillips, BS, State University of New York at Buffalo; MS, Ph.D., University of Rochester—Director, Biomedical Engineering; Associate Professor

Christiaan Richter, BA, B.Sc., University of Pretoria (South Africa); MS, University of Nebraska at Lincoln; Ph.D., Northeastern University—Assistant Professor

Kenneth J. Ruschak, BS, Carnegie Mellon University; Ph.D., University of Minnesota—Research Professor

Computer Engineering

Shanchieh J. Yang, BS, National Chiao-Tung University (Taiwan); MS, Ph.D., University of Texas at Austin—Department Head; Associate Professor

Juan C. Cockburn, BS, Universidad Nacional de Ingenieria (Peru); MS, Ph.D., University of Minnesota—Associate Professor

Amalan Ganguly, B. Tech., Indian Institute of Technology; MS, Ph.D., Washington State University—Assistant Professor

Kenneth W. Hsu, BS, National Taiwan Normal University; MS, Ph.D., Marquette University; PE—Professor

Dhireesha Kudithipudi, BS, Nagarjuna University (India); MS, Wright State University; Ph.D., University of Texas at San Antonio—Assistant Professor

Andrés Kwasinski, M.Sc., Ph.D., University of Maryland at College Park—Assistant Professor

Sonia Lopez Alarcon, BS, Ph.D., Complutense University of Madrid (Spain)—Assistant Professor

Marcin Lukowiak, M.Sc., Ph.D., Poznan University of Technology (Poland)—Assistant Professor

Roy W. Melton, B.Sc, M.Sc., Ph.D., Georgia Institute of Technology—Lecturer

Andreas E. Savakis, BS, 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

Electrical and Microelectronic Engineering

Sohail A. Dianat, BS, Aria-Mehr University of Technology (Iran); MS, Ph.D., George Washington University—Department Head; Professor

Mustafa A. G. Abushagur, BS, Tripoli University (Lebanon); MS, Ph.D., California Institute of Technology—President, RIT Dubai; Professor

Vincent J. Amuso Sr., BS, Western New England College; MS, Syracuse University; Ph.D., Rensselaer Polytechnic Institute—Associate Professor

David A. Borkholder, BS, Rochester Institute of Technology; MS, Ph.D., Stanford University—Associate Professor

Robert J. Bowman, BS, Pennsylvania State University; MS, San Jose State University; Ph.D. (Bioengineering), Ph.D. (Electrical Engineering), University of Utah—Professor

Edward E. Brown Jr., BS, University of Pennsylvania; MS, Ph.D., Vanderbilt University—Associate Professor

William W. Destler, BS, Stevens Institute of Technology; Ph.D., Cornell University— President, RIT; Professor

Dale E. Ewbank, BS, MS, Ph.D., Rochester Institute of Technology—Lecturer

Lynn F. Fuller, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York at Buffalo—Professor

Karl D. Hirschman, BS, MS, Rochester Institute of Technology; Ph.D., University of Rochester—Micron Technology Professor; Associate Professor

Christopher R. Hoople, BS, Union College; Ph.D., Cornell University—Lecturer

Mark A. Hopkins, BS, Southern Illinois University; MS, Ph.D., Virginia Polytechnic Institute and State University—Associate Professor

Michael A. Jackson, BS, MS, Ph.D., State University of New York at Buffalo—Associate Professor

Santosh K. Kurinec, BS, MS, Ph.D., University of Delhi (India)—Professor

Sergey E. Lyshevski, MS, Ph.D., Kiev Polytechnic Institute (Ukraine)—Professor

Athimoottil V. Mathew, BEE, Jadavpur University (India); M.Tech., Indian Institute of Technology; Ph.D., Queens University (Canada)—Professor

James E. Moon, BS, Carnegie Mellon University; MBA, University of Rochester; MS, Ph.D., University of California at Berkeley—Associate Professor

P. R. Mukund, BS, MS, Ph.D., University of Tennessee—Professor

Dorin Patru, BS, MS, Technical University of Cluj-Napoca (Romania); Ph.D., Washington State University—Associate Professor

Robert E. Pearson, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York at Buffalo—Director, Microelectronic Engineering Program; Associate Professor

Daniel B. Phillips, BS, State University of New York at Buffalo; MS, Ph.D., University of Rochester—Associate Professor

Sannasi Ramanan, BS, BE, M.Tech., Ph.D., Indian Institute of Technology—Associate Professor

Sean L. Rommel, BS, Ph.D., University of Delaware—Associate Professor

Eli Saber, BS, State University of New York at Buffalo; MS, Ph.D., University of Rochester—Professor

Ferat E. Sahin, BS, Istanbul Technical University (Turkey); MS, Ph.D., Virginia Polytechnic Institute—Associate Professor

George B. Slack, BS, Rochester Institute of Technology; MS, University of Rochester—Lecturer

Gill R. Tsouri, B.Sc., M.Sc., Ph.D., Ben-Gurion University (Israel)—Assistant Professor

Jayanti Venkataraman, BS, MS, Bangalore University (India); Ph.D., Indian Institute of Science—Professor

Industrial and Systems Engineering

Scott E. Grasman, BSE, MSE, Ph.D., University of Michigan—Department Head; Professor

Robin R. Borkholder, BS, MS, State University of New York at Buffalo—Lecturer

Andrés L. Carrano, BS, Universidad Catolica Andrés Bello (Venezuela); MS, Ph.D., North Carolina State University—Associate Professor

Denis R. Cormier, BS, University of Pennsylvania; MS, State University of New York at Buffalo; Ph.D., North Carolina State University—Earl W. Brinkman Professor

Marcos Esterman, BS, MS, Massachusetts Institute of Technology; Ph.D., Stanford University—Associate Professor

Mike Hewitt, BS, MS, University of Michigan; Ph.D., Georgia Institute of Technology—Assistant Professor

John T. Kaemmerlen, BS, MS, Rochester Institute of Technology—Lecturer

Michael E. Kuhl, BS, Bradley University; MS, Ph.D., North Carolina State University—Professor

Matthew M. Marshall, BS, Rochester Institute of Technology; Ph.D., University of Michigan—Associate Professor

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

Madhu R. Nair, BS, Rochester Institute of Technology; MS, Lehigh University—Lecturer

Nabil Z. Nasr, BS, Helwan University (Egypt); MS, Rutgers University; M.Eng., Pennsylvania State University; Ph.D., Rutgers University—Professor

Rubén A. Proaño, BS, Universidad San Francisco de Quito (Ecuador); MS, Ph.D., University of Illinois at Urbana-Champaign—Assistant Professor

Moises Sudit, BS, Georgia Institute of Technology; MS, Stanford University; Ph.D., Purdue University—Visiting Associate Professor

Brian K. Thorn, BS, Rochester Institute of Technology; MS, Ph.D., Georgia Institute of Technology—Associate Professor

Mechanical Engineering

Edward C. Hensel, BS, Clarkson University; Ph.D., New Mexico State University; PE—Department Head; Professor

Margaret B. Bailey, BS, Pennsylvania State University; Ph.D., University of Colorado at Boulder, PE—Professor

Stephen Boedo, BA, State University of New York at Buffalo; MS, Ph.D., Cornell University—Associate Professor

Agamemnon L. Crassidis, BS, MS, Ph.D., State University of New York at Buffalo—Associate Professor

Tuhin K. Das, B. Tech., Indian Institute of Technology; MS, Ph.D., Michigan State University—Assistant Professor

Steven Day, BS, Ph.D., University of Virginia—Associate Professor

Elizabeth A. DeBartolo, BS, Duke University; MS, Ph.D., Purdue University—Associate Professor

David J. Gee, BS, University of California at Davis; MS, Ph.D., Boston University—Assistant Professor

Hany A. Ghoneim, BS, MS, Cairo University (Egypt); Ph.D., Rutgers University—Professor

Amitabha Ghosh, B.Tech., M.Tech., Indian Institute of Technology; Ph.D., Mississippi State University—Professor

Mario W. Gomes, BsE, Cornell University; MS, Georgia Institute of Technology; Ph.D., Cornell University—Assistant Professor

Surendra K. Gupta, B.Tech., Indian Institute of Technology; MS, University of Notre Dame; Ph.D., University of Rochester—Professor

William A. Humphrey, BS, MS, Case Western Reserve University—Lecturer

Satish G. Kandlikar, BE, Marathwada University (India); M.Tech., Ph.D., Indian Institute of Technology—James E. Gleason Professor

Mark H. Kempski, BS, Purdue University; MS, Ph.D., State University of New York at Buffalo—Professor

Jason R. Kolodziej, BS, MS, Ph.D., State University of New York at Buffalo—Assistant Professor

Margaretha J. Lam, BS, MS, State University of New York at Buffalo; Ph.D., Virginia Polytechnic Institute and State University—Lecturer

Kathleen Lamkin-Kennard, BS, Worcester Polytechnic Institute; MS, Ph.D., Drexel University—Assistant Professor

Timothy P. Landschoot, BS, MS, Rochester Institute of Technology; MBA, University of Rochester—Lecturer

Kate Leipold, BS, MS, Rochester Institute of Technology—Lecturer

Alexander Liberson, BS, MS, Ph.D., State University of Aerospace Technology (Russia)—Visiting Associate Professor

Alan H. Nye, BS, MS, Clarkson College; Ph.D., University of Rochester—Associate Department Head; Professor

Ali Ogut, B.Ch.E., Hacettepe University (Turkey); MS, Ph.D., University of Maryland—Professor

Risa J. Robinson, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York at Buffalo—Associate Professor

Frank Sciremammano Jr., BS, MS, Ph.D., University of Rochester, PE—Professor

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Panchapakesan Venkataraman, B.Tech., Indian Institute of Technology; MS, Ph.D., Rice University—Associate Professor

Wayne W. Walter, BE, State University of New York Maritime College; MS, Clarkson College; Ph.D., Rensselaer Polytechnic Institute; PE—Professor

John D. Wellin, BS, Rochester Institute of Technology; MS, University of Rochester—Lecturer

The John D. Hromi Center for Quality and Applied Statistics

Donald D. Baker, BA, Trinity College; M.Ed., MBA, Ed.D., University of Rochester—Director; Professor

Peter Bajorski, MS, University of Wroclaw (Poland); Ph.D., Technical University of Wroclaw (Poland)—Associate Professor

Ernest Fokoué, Maitrise B.Sc., University of Yaoundé (Cameroon); M.Sc., Aston University (England); Ph.D., University of Glasgow (Scotland)—Assistant Professor

Steven M. LaLonde, BA, State University College at Potsdam; MBA, University of Rochester; MA, Ph.D., Syracuse University—Chair; Associate Professor

Daniel R. Lawrence, BA, BS, University of Akron; MA, Ball State University; MS, Rochester Institute of Technology; Ph.D., University of Toronto (Canada)—Associate Professor

Robert J. Parody, BS, Clarkson University; MS, Rochester Institute of Technology; Ph.D., University of South Carolina—Assistant Professor

Joseph G. Voelkel, BS, Rensselaer Polytechnic Institute; MS, Northwestern University; Ph.D., University of Wisconsin at Madison—Professor

Microsystems Engineering

Bruce W. Smith, BS, MS, Ph.D., Rochester Institute of Technology—Director; Intel Professor of Research and Technology; Professor

Zhaolin Lu, BS, Changqing University (China); MS, Michigan Technological University; Ph.D., University of Delaware—Assistant Professor

Stefan F. Preble, BS, Rochester Institute of Technology; Ph.D., Cornell University—Assistant Professor

Distinguished Professorships

James E. Gleason Professorship in Mechanical Engineering
Established: 1967
Donor: Estate of James E. Gleason
Purpose: To provide a permanent memorial for Mr. Gleason, who served as a trustee of RIT from 1930 until 1964, and to strengthen RIT in the field in which he received his education
Held by: Satish G. Kandlikar

Micron Technology Professor
Established: 2005
Donor: Micron Technology, Inc.
Purpose: To enhance microelectronics education at the undergraduate and graduate level and to foster development and collaboration in areas of mutual interest
Held by: Karl D. Hirschman

Earl W. Brinkman Professor of Screw Machine Technology
Established: 1995
Donor: Brinkman Family Charitable Trust and an anonymous foundation
Purpose: To create a lasting memorial to Earl W. Brinkman, an innovative leader in the screw machine industry, who retired from Davenport Machine Company in Rochester, N.Y., in 1979 after devoting 53 years to the company
Held by: Denis R. Cormier

Intel Professor of Research and Technology
Established: 2000
Donor: Intel Corporation
Purpose: To support RIT's Microelectronic Engineering Department and to develop new methods of manufacturing computer chips
Held by: Bruce W. Smith

College of Health Sciences and Technology

Richard Doolittle, Acting Dean/Chair

Programs of study

Bachelor of Science degrees in:

Biomedical Sciences	78
Diagnostic Medical Sonography (Ultrasound)	79
Nutrition Management	81
Physician Assistant	81

Certificates in:

Diagnostic Medical Sonography (Ultrasound)	80
Exercise Science	83

RIT has recently established the College of Health Sciences and Technology to respond to the growing need for well-educated professionals in the heath 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.

The college offers clinically related and biomedical research-based programs to meet both the present and future needs of the health care system. The college's faculty and staff are committed to delivering high quality educational programs. Building on a foundation of liberal arts and basic sciences, students will gain advanced knowledge in theoretical science and practical applications in experiential learning environments. These experiences prepare students to serve as practitioners, scientists, and leaders through their contributions to, and the provision of, high-quality patient care, health care service, and/or applied, translational biomedical research.

Admission requirements

For more information on undergraduate admission, including freshman and transfer admission guidelines, please refer to 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.

Faculty

Faculty members in the college have considerable experience in their respective fields of discipline. Basic science and clinical faculty work side-by-side to provide students with a comprehensive learning experience to prepare them for their chosen health-care-related career.

Facilities and resources

In addition to facilities shared with the College the Science, the Center for Bioscience Education and Technology building provides a comprehensive environment to support academic, community, and career-training programs in the emerging life and medical sciences. The facility consists of multi-purpose, high-tech laboratories and classrooms for academic programs, continuing education

programs, research, K-12 student workshops, secondary school training programs, and work-force development.

Cooperative education

All students will gain advanced knowledge in theoretical science and practical applications in experiential learning environments. For some students in the college this comes primarily in the form of unpaid clinical internship rotations through medical settings designed to help students master technical standards for their degree and eventual licensure. Additional opportunities are available for students to participate in cooperative education experiences to complement disciplines offered through the curriculum.

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 Joint Review Committee on Education in Diagnostic Medical Sonography of the Commission on Accreditation of Allied Health Education Programs (CAAHEA). 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 Commission of Accreditation on Dietetic Education of the American Dietetic Association.

Advising

The college's Student Services Office offers administrative support to assist with course selection and registration, career guidance, student records, and course scheduling. In addition, the administrative staff provides students with information on additional support services within RIT. Students are assigned an individual faculty adviser, who becomes an integral part of their advising network.

Academic enrichment

Honors Program: Students who demonstrate a high level of achievement at the high school level may be invited to join the Honors program. These students will participate in Honors course work throughout their program of study and experiential learning activities under the guidance of a faculty mentor. Honors students will be selected during the admissions process.

Study Abroad: RIT encourages all students to consider a study abroad program to enhance their understanding of other cultures. Students may study full time at a variety of host schools and are able to select both business and liberal arts classes. RIT's Study Abroad Office has information about foreign study options and opportunities.

Minors: RIT offers students more than 95 minors to choose from to enhance their academic program or further develop a personal area of interest. For a detailed list of minors, including courses, please refer to the Minors section of this bulletin.

Special opportunities

Graduate study: The college offers master of science degrees in health systems administration and clinical chemistry, and a master of fine arts degree in medical illustration. Additional graduate programs in health-related fields and in the sciences are offered through the College of Science. Please refer to the *Graduate Bulletin* or the colleges' websites for more information.

Premedical Studies Advisory Program

The premedical studies advisory program is designed to provide guidance and assistance to all RIT students who are interested in continuing their education in one of the health professions; e.g., medicine, osteopathy, dentistry, optometry, podiatry, or veterinary science. Faculty members who participate in this program provide advice on the prerequisites (course selection, health-related experiences, extracurricular activities) needed for application to various health-related professional schools. In addition, they provide assistance with the application process.

Enrollment in premedical studies

The premedical studies advisory program is available to students who are enrolled in one of the degree granting programs offered at RIT or to nonmatriculated students taking the premedical core courses or preprofessional prerequisite courses. To enroll in the program, students must contact the premedical studies office in room 1109 in the Center for Bioscience Education and Technology (CBET), or call Kristen Waterstram-Rich, Director, at (585) 475-7105.

Biomedical Sciences, BS

http://www.rit.edu/cos/medical/biomedical_sciences.html

Kristen M. Waterstram-Rich, Program Director
(585) 475-5117, kmw4088@rit.edu

Program overview

Biomedical sciences is an academic program designed to prepare students for advanced study in medical, dental, or graduate schools as they pursue careers in health care or biomedical research. Faculty, from across the basic science disciplines and within and outside of the college, offer a diverse curriculum as well as research opportunities for students. In tracking through a highly flexible curricular structure, students will have access to myriad scientific professionals and educational experiences.

For the past 20 years, researchers in the biomedical fields have enjoyed rapid gains in employment due, in part, to the advances in biotechnology and an increase in staff in new medical research industries. Continued employment growth will occur with the increased need for more research in many areas of health care, including AIDS, diabetes, cancer, and neurological disorders. Courses and concentration options within biomedical sciences are designed to attract students interested in the broad spectrum of medically related jobs and to provide a knowledge base and the technical skills required to pursue their chosen careers.

Curriculum

Requirements for the BS degree in biomedical sciences

The curricular requirements for the BS degree in biomedical sciences are very flexible, consisting of a life sciences core and a broad range of flexible options. The life sciences core is designed to provide the student with a strong grounding in mathematics and science, a complement of liberal arts courses in preparation for a particular career path—e.g., entry into medical/dental school graduate studies—or a research position in an applied area of biomedical science. Upon completion of the life sciences core, a choice of concentration areas is available in which the student, in consultation with an academic adviser, may select and complete a series of required and elective courses. Concentration areas include focused study in forensic science, pre-health professions (premedical, pre-dental), exercise science, pathology, neuroscience, and genetics. Students

also may choose to use elective credits to engage in undergraduate research with a faculty mentor and/or pursue a secondary field of study through a minor; e.g., in the liberal arts (communications, psychology, public policy, foreign language, etc.) or sciences (statistics, biochemistry, or imaging science), or possibly a second major.

Biomedical sciences, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1001-200, 259	Freshman Symposium	2
1001-201, 202, 203	General Biology I, II, III	9
1001-205, 206, 207	General Biology Lab I, II, III	3
1011-215, 216, 217	General and Analytical Chemistry I, II, III	10
1011-205, 206	Chemistry Principles I, II Lab	2
1011-227	General and Analytical Chemistry III Lab	1
1016-214, 215	Elementary Calculus I, II	6
	Wellness Education†	0
	Liberal Arts*	12
	First-Year Enrichment	2
Second Year		
1001-311	Cell Biology	4
1001-350	Molecular Biology	4
1026-350, 360	Anatomy and Physiology I, II	10
1013-231, 232, 233	Organic Chemistry I, II, III	9
1013-235, 236, 237	Organic Chemistry I, II, III Lab	3
1016-319	Data Analysis I	4
	Science/Track Elective	4
	Liberal Arts*	12
Third Year		
1017-211, 212, 213	College Physics I, II, III	12
	Science/Track Electives	16
	University-wide Electives	2-4
	Liberal Arts*	12
Fourth Year		
	Science/Track Electives	24
	University-wide Electives	17
Total Quarter Credit Hours		**180-182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Program concentrations
The program includes the following concentrations:

Forensic science
Pre-health professions
Exercise science
Pathology
Genetics
Neuroscience

Elective courses
Below is a sample of available elective courses.

Bioinformatics	Immunology
Science of Forensics	Premedical Studies
Genetics	Medical Terminology
Introduction to Infectious Diseases	Patient Care
Biochemistry	Introduction to Microbiology
Sports Physiology and Life Fitness	Exercise Prescription
Fitness Programming and Prescription	Undergraduate Research*
Sports Nutrition	Medical Genetics
Histology	Introduction to Neuroscience
Medical Pathophysiology	Genetic Engineering
Human Gross Anatomy	Endocrinology

Developmental Biology	Virology
Introduction to Pharmacology	Evolutionary Biology

*Variable credit; requires at least two sequential quarters of participation

Diagnostic Medical Sonography, BS

http://www.rit.edu/cos/medical/diagnostic_medical.html

Hamad Ghazle, Program Director
(585) 475-2241, hhgsci@rit.edu

Program overview

One of the fastest-growing areas in diagnostic medicine, diagnostic medical sonography is a noninvasive, nontoxic diagnostic medical imaging modality in which high-frequency sound waves are used to produce images of many different areas 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. The profession has grown rapidly in the last 20 years and is expected to continue to grow over the next several decades. Evaluation of the job market and a survey of employers indicate a strong demand for well-trained sonographers.

The medical sonography program is one of only a few such degree programs in the nation. It offers a BS degree in general ultrasound and a certificate option in general ultrasound (abdomen/small parts and obstetrics and gynecology, with an introduction to vascular). The program prepares students for application to schools of medicine, dentistry, veterinary medicine, podiatry, and chiropractic medicine. Students also can earn a certificate in health systems administration while completing their requirements. Additionally, graduates may choose to pursue a master's or doctoral degree in a variety of fields.

The intent of the program is to prepare students to be leaders in the field of ultrasound. Skills in administration and research are emphasized in addition to the development of scanning and diagnostic abilities. Students apply their theoretical knowledge and practice their skills in our dedicated ultrasound laboratory before their clinical internship. Upon successful completion of the program requirements, students are eligible to take a national certifying examination for abdominal, small parts, obstetrical, and gynecological ultrasound. Each candidate is also introduced to vascular ultrasound.

Graduates are prepared to pursue a variety of career options, nationally and internationally, in medical, industrial, and educational settings. Our graduates can be found in a wide range of positions, including supervisory and administrative, in hospitals, clinics, private physicians' offices, teaching, research, sales, and industry. Graduates also can choose to work as freelance sonographers or for mobile services.

Curriculum

Students must meet the minimum requirements of the university as described in this bulletin and, in addition, must complete the curriculum requirements listed here or the equivalent, as determined and approved by the department of medical sciences. The BS degree is typically a four-year program, including clinical internship, unless the student has transfer credit from another institution. Those holding associate degrees may be able to complete the BS degree in two years; additional course work may be required. Contact the program director for further information on BS degree requirements.

Clinical internship

The clinical internship year (completed with a 20 percent tuition discount) provides hands-on experience at two or more medical facilities in upstate New York or at approved regional and national medical ultrasound facilities. All students begin the internship by attending an intensive five-week experience on campus. During this time, they learn how to perform complete sonographic examinations and to recognize anatomy and disease states using equipment in the ultrasound laboratory. Students also learn about hospital departmental and administrative operations. After completing the requirements, candidates are assigned to a medical training site for clinical experience. At the medical facility, 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. The students' clinical progress and performance are monitored by the program's clinical coordinator and program director, who make periodic visits to the clinical internship sites. Additionally, students return to campus each month for three days of lectures, presentations, projects, and testing.

Accreditation

The program is accredited by the Joint Review Committee on Education in Diagnostic Medical Sonography of the Commission on Accreditation of Allied Health Education Programs.

Diagnostic medical sonography (general ultrasound), BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1001-201, 202, 203	General Biology	9
1001-205, 206, 207	General Biology Lab	3
1011-215, 216, 217	General and Analytical Chemistry	10
1011-205, 206, 207	Chemistry I, II, III Labs	3
4006-230	Computers in Medicine	4
1016-226	Calculus for Management Science	4
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1017-211, 212, 213	College Physics	12
1026-205	Introduction to Diagnostic Medical Imaging	2
1026-301	Medical Terminology	3
1026-350, 360	Anatomy and Physiology	10
1016-319	Data Analysis I	4
	Liberal Arts*	12
Third Year		
1030-412	Cross-Sectional Anatomy	4
1030-409, 410	Ultrasound Instrumentation I, II	8
1026-415	Pathophysiology	4
1004-315	Medical Genetics	2
1026-333	Patient Care	2
1030-559	Ultrasound Scanning	4-6
	University-wide Electives	12
	Liberal Arts*	12
Fourth Year (Internship)		
1030-552	Introduction to Obstetrical Ultrasound	3
1030-553	Gynecologic Ultrasound	3
1030-556	Abdominal Ultrasound I	3
1030-570	Clinical Ultrasound I	7
1030-554	Advanced Obstetrical Ultrasound	4
1030-557	Abdominal Ultrasound II	3

COURSE		QTR. CR. HRS.
1030-560	Ultrasound Seminar	2
1030-571	Clinical Ultrasound II	7
1030-558	Small Parts Ultrasound	3
1030-414	General Vascular Evaluation	4
1030-561	Research Seminar	2
1030-572	Clinical Ultrasound III	7
Total Quarter Credit Hours		**184-186**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Diagnostic Medical Sonography, Cert.

Hamad Ghazle, Program Director
(585) 475-2241, hhgscl@rit.edu

Program overview

The certificate option in diagnostic medical ultrasound is a one-year course of study that includes lectures integrated with a clinical internship. Certain prerequisite courses must be completed before starting the clinical internship. Contact the program director for further information on prerequisite course work. The certificate option is available to all registered allied health practitioners as well as to those holding an associate or bachelor's degree in a relevant discipline.

Curriculum

The course work for the certificate program must be completed before students are allowed to begin the program's required clinical internship.

Diagnostic medical sonography certificate program, typical course sequence

COURSE		QTR. CR. HRS.
1026-205	Introduction to Diagnostic Medical Imaging*	2
1030-412	Cross-Sectional Anatomy*	4
1030-409, 410	Ultrasound Instrumentation I, II*	8
1026-415	Pathophysiology*	4
1030-559	Ultrasound Scanning*	4-6
Clinical internships:		
1030-552	Introduction to Obstetrical Ultrasound	3
1030-553	Gynecologic Ultrasound	3
1030-556	Abdominal Ultrasound I	3
1030-570	Clinical Ultrasound I	7
1030-554	Advanced Obstetrical Ultrasound	4
1030-557	Abdominal Ultrasound II	3
1030-560	Ultrasound Seminar	2
1030-571	Clinical Ultrasound II	7
1030-558	Small Parts Ultrasound	3
1030-414	General Vascular Evaluation	4
1030-561	Research Seminar	2
1030-572	Clinical Ultrasound III	7
Total Quarter Credit Hours		**70-72**

* Course work must be completed before entering clinical internships. Other prerequisite courses may apply.

Nutrition Management, BS

http://www.rit.edu/cast/hsm/programs/nutrition/

Barbra Cerio-Iocco, Chair
(585) 475-2352, bxcism@rit.edu
Elizabeth Kmiecinski, Co-Chair
(585) 475-2357, eakism@rit.edu

Program overview

People are increasingly interested in the nutritional requirements for obtaining good health and a long life. Registered dietitians work with people of all ages, cultures, and economic means. They learn to understand people as individuals, thereby helping their clients solve their nutritional needs. Registered dietitians are health professionals who apply the science and art of food and nutrition.

The BS program in nutrition management offers a challenging curriculum that prepares students to become registered dietitians and practice in diverse settings such as private practice; community nutrition and public health; wellness; sports fitness programs; corporations; clinical dietetics, hospital or long-term-care food management facilities; research; food companies; nutrition education; restaurant consulting; writing and communication.

Curriculum

The program leads to a BS degree that meets the education requirements of the American Dietetic Association (ADA). The pre-professional phase (years 1 and 2) involves core courses in basic sciences, food science, basic nutrition, mathematics, liberal arts, and business. The professional phase (years 3 and 4) includes practicum experiences in various upper-division courses. Students must complete three quarters of approved cooperative education experience and have the opportunity to acquire a certificate or minor in a variety of content areas, including exercise science. To become credentialed as a registered dietitian, students also need to complete an ADA-accredited supervised practice after graduation and pass the National Registration Exam for Dietitians.

Two-year transfer in nutrition management

Due to specific areas of study required by the American Dietetic Association and RIT, the amount of transferable credit and estimated time to complete work for the BS degree must be determined by each individual's transcript. A minimum grade-point average of 3.2 and grades of A or B in all required science courses are required for admission and continuation in this program. For specific information regarding transfer admission, please refer to the Admission section of this bulletin.

Accreditation

The nutrition management program has been granted initial accreditation by the American Dietetic Association Commission on Dietetic Education/CADE, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995.

Nutrition management, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0619-220	Service Management Careers in Hospitality Industry	2
0620-213	Contemporary Nutrition	4
0621-225	Principles of Food Production	4
0621-314	Sanitation and Safety	2
0619-221	Orientation to Computers in Hospitality	2
1011-201, 205	Survey of General Chemistry, Lab	5
1011-202, 207	Survey of Organic Chemistry, Lab	5
1011-203	Biochemistry	3
1016-225	Algebra for Management Science	4
	Liberal Arts*	12
0511-211	Principles of Microeconomics	4

COURSE		QTR. CR. HRS.
	Wellness Education†	0
	Pathways and Discovery	2
0621-499	Cooperative Education	Co-op
Second Year		
0101-301	Financial Accounting	4
0105-363	Principles of Marketing	4
1004-210	Microbiology	4
1026-350, 360	Anatomy and Physiology I, II	10
1016-319	Data Analysis I	4
	Liberal Arts*	12
0621-318	Food and Beverage Management	4
	Free Electives	8
0621-499	Cooperative Education	Co-op
Third Year		
0619-410	Assessment of Service Quality	4
0619-426	Technology in Service Systems	4
0619-480	Human Resources Management	4
0621-416	Product Development	4
0620-402	Dietetic Environment	4
0621-331	Restaurant Operations	6
0620-554	Nutrition in Life Cycle	5
0627-519	Techniques of Dietetic Education	4
	Liberal Arts*	8
0621-499	Cooperative Education	Co-op
Fourth Year		
0619-470	Leadership Management in Service Culture	4
0619-490	Senior Project	4
0620-525, 526	Medical Nutrition Therapy I, II	9
0620-550	Community Nutrition	4
0620-510	Nutrition and Alternative Medicine	2
	Free Electives	4
	Liberal Arts*	12
	General Education	8
Total Quarter Credit Hours		**189**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Physician Assistant, BS/MS

http://www.rit.edu/cos/medical/physician_assistant.html

Heidi Miller, Program Director
(585) 475-5945, hbmscl@rit.edu

Program overview

The physician assistant program focuses on primary care for patients. Physician assistants provide diagnostic and therapeutic patient care in conjunction with a supervising physician. They perform tasks that include: eliciting medical histories, conducting physical examinations, ordering laboratory and radiological testing, diagnosing common illnesses, determining treatment, giving medical advice, counseling and educating patients, promoting wellness and disease prevention, assisting in surgery, and 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, obstetrics/gynecology, psychiatry, general surgery, orthopedics, neurosurgery, and neonatology. Clinical rotations (internships) during students' senior year provide the opportunity to explore these varied disciplines.

Curriculum

The physician assistant program is divided into the pre-professional phase (years 1 and 2), which includes course work in the sciences, mathematics, and liberal arts; and the professional phase, (years 3, 4, 5), which features didactic medical education and culminates in clinical rotations in which students apply their knowledge in the medical field in a series of rotations through various disciplines of medicine.

Accelerated dual degree

The physician assistant program is now offered as a five-year BS/MS degree, enabling students to earn both a bachelor's degree and a master's degree. Students entering the program in fall 2011 will begin their studies under the new format.

Clinical internship

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 fields of inpatient medicine, family medicine, geriatrics, orthopedics, emergency medicine, OB/GYN, pediatrics, general surgery, and psychiatry. Students also are able to select one elective rotation, which enables them to customize their experience according to their medical area of interest.

Accreditation

The professional phase (years 3, 4, and 5) of the physician assistant program is fully accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA).

Physician assistant, BS/MS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year (Pre-professional)		
1001-201, 202, 203	General Biology	9
1001-205, 206, 207	General Biology Lab	3
1016-226	Calculus for Management Science	4
1011-215, 216, 217	General and Analytical Chemistry I, II, III	10
1011-205, 206	Chemical Principles I, II Lab	2
1011-227	General and Analytical Chemistry III Lab	1
	Liberal Arts*	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year (Pre-professional)		
1026-350, 360	Anatomy and Physiology I, II	10
1016-319	Data Analysis I	4
1009-334	Biochemistry	4
1032-406	Medical Microbiology	4
	University-wide Electives	12
	Liberal Arts*	20
Third and Fourth Years (Professional)		
1032-501, 502, 503	Pathophysiology of Diseases I, II, III	6
1032-450	Healthcare Policy and Law	2
1032-404	Physician Assistant Seminar	2
1032-509	Diagnostic Lab Medicine	2
1032-424	Advanced Gross Anatomy	2
1026-330	Medical Genetics	2

COURSE		QTR. CR. HRS.
1032-430	Society and Patient Care	3
1032-408	Behavioral Medicine	4
1032-400	Medical Interviewing in Patient Care	2
1032-401, 402	Patient History and Physical Exam I, II	10
1032-522	Procedural Clinical Skills	4
1032-515, 516, 517, 518	Clinical Pharmacology I, II, III, IV	10
1032-521	Diagnostic Radiology	2
1032-510, 511	Hospital Practice I, II	10
1032-411, 412, 413	Essentials of Medicine I, II, III	15
1032-522, 523	Clinical Medicine I, II	8
1032-729	Clinical Epidemiology	4
	Graduate Electives	8
1032-723	Advanced Clinical Medicine	4
1032-730	Research Methods	3
1032-720	Clinical Seminar	3
1032-810	Graduate Project I	2
1032-761	Professional Practice I	2
1032-750	Pediatrics	4
1032-751	General Medicine	4
Fifth Year (Professional)‡		
1032-752	OB-GYN	4
1032-753	Emergency Medicine	4
1032-754	Surgery	4
1032-762, 763	Professional Practice II, III	4
1032-820	Graduate Project II	2
1032-755	Orthopedics	4
1032-756	Geriatrics	4
1032-757	Psychiatry	4
1032-758	Family Medicine	4
1032-759	Elective Rotation	4
1032-764	Professional Practice	2
Total Quarter Credit Hours		**259**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Clinical rotations are completed at various hospitals and ambulatory health care settings approved for training physician assistants.

Admission requirements

In addition to the university's general admission procedures, the physician assistant program requires the completion of a supplemental data packet, application, and successful completion of an admission interview (by invitation). For more information regarding these supplemental requirements, please contact the Office of Undergraduate Admissions or refer to the Undergraduate Admission section of this bulletin. It also is important to note that the minimum grade-point average for acceptance into the physician assistant program is 3.0 (on the basis of a 4.0 maximum) for both high school and transfer students. In order to graduate from the program, a GPA of 2.8 or better must be maintained.

Transfer admission

Qualified transfer students are accepted, on a space available basis, into the program. Prior health care experience and/or shadowing are strongly recommended. During the transition of the program from a BS to a BS/MS, RIT will continue to accept a limited number of transfer students into the second and third years of the four-year BS program. 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 into the program. All

pre-professional course work must be completed to continue on, or to be considered for entry, into the professional phase of the program. Please contact the Office of Undergraduate Admissions for information on transfer requirements.

Additional information

Advanced placement

In the pre-professional phase, advanced placement (AP) credit for liberal arts courses is evaluated and approved by the College of Liberal Arts. AP credit for calculus, statistics, and university electives are awarded, as applicable, within the program. AP credit is not accepted for biology and chemistry as course substitutions, but university elective credit is awarded for these courses, as applicable. Advanced placement or credit for experiential learning is not awarded for courses in the professional phase of the program.

Exercise Science, Cert.

http://www.rit.edu/cos/medical/exercise_science.html

William Brewer, Program Director
(585) 475-2476, wsbsci@rit.edu

Program overview

College-level knowledge and professional certification are increasingly required for those who wish to work in the fitness industry, whether full- or part-time, and whether in an athletic club, ski resort, or sports medicine facility. Knowledge of and professional certification in fitness instruction and programming also are of increasing value to allied health professionals who wish to augment their care or practice with the ability to prescribe exercise programs that address special medical needs. The certificate program 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 in the program will be 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 program, typical course sequence

COURSE		QTR. CR. HRS.
1026-305	Sports Physiology and Life Fitness	4
1026-306	Fitness Prescription and Programming	4
Choose one of the following courses:		4
1026-307	Exercise Prescription for Special Populations	
0620-300	Sports Nutrition	
Total Quarter Credit Hours		**12**

College of Health Sciences and Technology

Biomedical Sciences

William Brewer, BS, State University College at Cortland; MS, Empire State College—Lecturer

Richard L. Doolittle, BA, University of Bridgeport; MS., Ph.D., University of Rochester—Assistant Provost for Undergraduate Education; Professor

G. Thomas Frederick, BS, MS, Ph.D., The Ohio State University—Professor

Michele Lennox, AAS, Rochester Institute of Technology—Lecturer

Douglas P. Merrill, BS, Ph.D., State University of New York College of Environmental Science and Forestry—Professor

Robert Osgood, BS, Jackson State University; MS, Ph.D., University of Southern Mississippi—Assistant Professor

Elizabeth Perry, BS, State University College at Brockport; MS, Ph.D., University of Rochester—Lecturer

Bolaji Thomas, BS, MS, Ph.D., University of Lagos (Nigeria)—Assistant Professor

Kristen Waterstam-Rich, BS, MS, Rochester Institute of Technology—Director, Premedical Studies; Professor

Clinical Chemistry

James C. Aumer, BS, MS, Michigan Technology University—Interim Program Director; Professor

Diagnostic Medical Sonography

Jodie Crowley, BS, MS, Rochester Institute of Technology—Clinical Coordinator

Vikram Dogra, MD—Medical Director

Hamad Ghazle, BS, RDMS, Rochester Institute of Technology; MS, Ed.D. University of Rochester—Program Director; Professor

Susan Voci, MD—Co-Medical Director

Nutrition Management

Barbra A. Cerio-Iocco, RD, BS, MS, State University of New York at Buffalo—Associate Professor

Elizabeth A. Kmiecinski, RD, BS, The Ohio State University; MS, University of Kentucky—Associate Professor

Physician Assistant

Cara F. Calvelli, AB, Mount Holyoke College; MD, Cornell University Medical College—Assistant Professor

Peter P. Ciancaglini, PharmD, Campbell University—Adjunct Faculty

Nancy Herbert, BS, Rochester Institute of Technology—Academic Support Coordinator

Paul Levy, BS, MD, The Ohio State University—Medical Director

Heidi Miller, BS, PA-C, Alderson Broaddus College; MPH, University of Rochester—Program Director; Professor

Patricia Newcomb, AB, Mount Holyoke College; MD, Tufts University Medical School—Academic Coordinator; Assistant Professor

Joseph Nicholas, BA, Cornell University; MD, University of Pittsburgh—Medical Education Consultant

John B. Oliphant, BA, Messiah College; MS, Elmira College; MHP, PA-C, Northeastern University—Clinical Coordinator; Adjunct Faculty

Nancy Valentage, BS, PA-C, Gannon University; MS, Rochester Institute of Technology—Associate Director/Clinical Coordinator; Professor

Programs of study

Bachelor of Fine Arts degrees in:

3D Digital Graphics	93
Ceramics and Ceramic Sculpture	86
Film and Animation	98
Fine Arts Studio (Painting, Printmaking, Sculpture, New Forms)	92
Glass	87
Graphic Design	94
Illustration	91
Industrial Design	95
Interior Design	95
Medical Illustration	92
Metalcrafts and Jewelry	88
New Media Design and Imaging	96
Professional Photographic Illustration*	101
Visual Media*	103
Woodworking and Furniture Design	89

Bachelor of science degrees in:

Biomedical Photographic Communications	99
Imaging and Photographic Technology	100
Media Arts and Technology	104
Motion Picture Science (formerly Digital Cinema)	97

Associate in Occupational Studies degree in:

Woodworking and Furniture Design	90

*The bachelor of fine arts degree in professional photographic illustration offers options in advertising photography, fine art photography, photojournalism, and visual media.

College of Imaging Arts and Sciences

Lorraine Justice, Dean

http://cias.rit.edu

The College of Imaging Arts and Sciences includes the schools of American Crafts, Art, Design, Film and Animation, Photographic Arts and Sciences, and Print Media. Students in most of the baccalaureate and master's degree programs complete foundation courses for fundamental studio course work and historical grounding in the visual arts.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Portfolio review: Admission to the schools of American Crafts, Art, and Design requires a combination of academic performance and creative visual skills that are evaluated via a portfolio review. Faculty will review each student's portfolio to evaluate creative visual skills as well as the potential for success in the student's selected program.

The schools of Photographic Arts and Sciences and Print Media do not require a portfolio for acceptance into their undergraduate programs. However, a portfolio is required if students are requesting a transfer of credits to satisfy program requirements. A portfolio is optional for applicants to the School of Film and Animation.

Guidelines for portfolio submission: 1. Portfolios for the schools of American Crafts, Art, and Design will be evaluated on the basis of drawing and design ability, original ideas, and craftsmanship. Portfolios should consist of 10 to 20 digital files of a student's best artwork, saved in a JPEG file format on a CD. There should be a minimum of five samples of drawings made from direct observation. These should include figure, perspective, still life, and object drawing (not copied from photographs, comics or "fantasy"). Other work may include painting, photography, page layout design, two-dimensional design, sculpture, models, mechanical drawings, and marker renderings. The clarity of the digital file is of the utmost importance. Portfolios that do not meet the correct specifications will not be reviewed.

2. All digital files and documents submitted should be clearly labeled. Each digital file should be submitted with the student's last name and a number beginning with two zeros (e.g., smith001.jpg, smith002.jpg) with no spaces. The CD must be labeled with the student's full name, address, phone number, and e-mail address (if available). Please write legibly and directly on the face of the CD with a black or blue permanent marker. Package the finished CD in a plastic case for protection.

3. The CD must be accompanied by a separate sheet of paper listing each work by corresponding number with title, size, media, and assignment. Exhibition/award notations may be included. Make certain to include the student's full name, address, phone number, and e-mail address (if available) on the list.

4. Medical illustration applicants should include at least six samples of natural forms such as shells, figures, or animals rendered in a single medium.

5. School for American Crafts applicants are encouraged to include works produced in the medium of their intended major, if possible. Although portfolios are required, in extenuating circumstances a portfolio waiver can be considered. Contact the School for American Crafts (585) 475-6114, sac@rit.edu, for details/consideration.

6. Portfolios are not required by applicants to the School of Film and Animation but may be submitted. Portfolios are likely to be reviewed in cases where final determination of acceptance must be made between similar academically competitive applicants. Most portfolios will not be reviewed. Applicants must present their best work, and films or videos should total 15 minutes or less in length. A complete work is preferable to a "demo reel." If there are no short works, then a 15-minute excerpt of a longer piece is acceptable.

7. Transfer students in art, design, and crafts should clearly represent their basic foundation experience as well as any advanced or applied work. Students considering transfer should notify RIT at the earliest possible moment. Catalog course descriptions assist in transfer credit evaluation.

8. Digital portfolios will not be returned. It is recommended that students make additional copies of their portfolio CD for their own records.

9. While every precaution is taken to ensure proper handling, the university assumes no responsibility for lost or damaged portfolios.

10. The schools participate in open house programs hosted by RIT's Office of Undergraduate Admissions and selected National Portfolio Days. These events allow for the presentation and review of original work and, for the exceptional portfolio, a means for on-site acceptance of portfolio. For information on National Portfolio Days, call the foundation department at (585) 475-2647. For dates of open houses and general admission information, call the Office of Undergraduate Admissions at (585) 475-6631.

11. For further information on submitting a digital portfolio, please visit our website at http://www.rit.edu/emcs/admissions/application-forms.

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.

Facilities
- Thirty fully equipped photographic studios.
- More than 20 fully ventilated darkrooms.
- Extensive professional 16mm film and digital video field production equipment, including newly renovated film and animation facilities, 60 digital film editing stations, three animation labs, three stop-motion studios, two sound stages, and prop shop.
- More than $40 million worth of printing and publishing equipment in 17 laboratories.

- Wallace Library, rich in photography, graphic arts publications, and contemporary periodicals in design, arts, crafts for study, and research; ARTstor, an online image collection; and electronic reserve course materials.
- Cooperative efforts with George Eastman House International Museum of Photography and Film, with access to the museum's collections of photography, rare books, motion pictures, and technology.
- Library of the Kodak Research Laboratories.
- The Melbert B. Cary Jr. Graphic Arts Collection, containing more than 20,000 volumes of rare books and additional resources that illustrate fine printing, the history of printing, book design and illustration, papermaking, binding, and other aspects of the graphic arts.
- The Graphic Design Archives in the Wallace Library are complete and partial collections of some of the world's most influential pioneers in graphic design. The collections contain original source materials documenting the designers' working lives and include such unique items as original artwork, sketchbooks, sculptures, architectural models, reliefs, and printed samples.
- The Vignelli Center for Design Studies houses the extensive professional archive of Massimo and Lella Vignelli, and offers exhibition space and archival study classrooms for the examination of Modernist design history, theory, and criticism.
- Bevier Gallery and the School of Photographic Arts and Sciences (SPAS) Gallery, the college's on-campus exhibition spaces.
- Gallery r, the university's off-campus, student-managed contemporary art gallery, is overseen by the School of Art. The gallery actively educates and encourages viewers to examine the relevance of art and cultural exposure in their own lives. Gallery r is an educational laboratory presenting art to the widest possible audience and maintaining a select collection of student and alumni artwork for on-site consignment and sales.
- The college houses archives, as well as exhibition and display spaces. Exhibitions regularly feature the work of contemporary painters, designers, photographers, illustrators, graphic artists, filmmakers, and faculty and student work.
- A comprehensive art library and a variety of educational resources are available in RIT's library.

Cooperative education
Students may participate in cooperative education experiences or internships. Co-op allows students the opportunity to evaluate career goals before making employment decisions, develop insight into their chosen fields, gain professional experience that enhances their resumes, and increase their potential for placement and rapid career advancement after graduation. As part of the student's career exploration, co-op experiences provide an opportunity to observe and perform work directly related to the student's major.

Co-op is required in the School of Print Media and in the bachelor of science programs in the School of Photographic Arts and Sciences. Although co-op is not required in the BFA programs in the schools of American Crafts, Art, Design, Film and Animation, or Photographic Arts and Sciences, many students choose to co-op during the summer quarter to enhance their learning while gaining valuable experience.

For more information about cooperative education, please refer to the Office of Cooperative Education and Career Services or visit the college's website.

Accreditation

All programs offered in the College of Imaging Arts and Sciences are fully accredited and approved by the New York State Department of Education and the Middle States Association of Colleges and Secondary Schools. In addition, the National Association of Schools of Art and Design accredits the BFA and MFA programs in the schools of American Crafts, Art, Design, Photographic Arts and Sciences, and Film and Animation. The School of Design's interior design program is accredited by the Council for Interior Design Education Accreditation.

Advising

All programs provide expert advisement to students in multiple ways. Each CIAS student is assigned a primary adviser with whom they consult on a quarterly basis concerning course selection, assignments, co-ops, educational challenges, and career opportunities. In addition, each school has program chairs per discipline whose primary task is to advise students, as well as the chair of the school and academic advisers in the college's Student Services Offices. While at RIT and after graduation, students can seek and receive personal and professional advisement to support their studies.

Academic Enrichment

Honors Program: Students who demonstrate a high level of achievement at the high school level may be invited to join the Honors program. These students will participate in Honors course work throughout their program of study and experiential learning activities under the guidance of a faculty mentor. Honors students will be selected during the admission process.

Study Abroad: RIT encourages all students to consider a study abroad program. Students may study full time at a variety of host schools and are able to select both courses in their majors and/or liberal arts classes. The Study Abroad Office has information about foreign study options and opportunities.

Minors: RIT offers students more than 95 minors to choose from to enhance their academic program or further develop a personal area of interest. For a detailed list of minors, including courses, please refer to the Minors section of this bulletin.

Professional student organizations: The college maintains memberships in the following professional organizations: Industrial Designers Society of America, ACM Siggraph, American Institute of Architects, American Institute of Graphic Arts, American Society of Interior Designers, American Society of Media Photography, Bio Communications Association, College Art Association, ICOGRADA, International Interior Design Association, International Panoramic Photographers Association, International Society for Optical Engineering, National Press Photographer Association Student Chapter, Ophthalmic Photographers Society, Photo Imaging Educators Association, Photo Marketing Association International, Society of Environmental Graphic Designers, Society for Imaging Science and Technology, and Society for Photographic Education.

Special Opportunities

Graduate study: The college offers master of fine art degrees in ceramics and ceramic sculpture, computer graphics design, fine arts studio, glass, graphic design, imaging arts, industrial design, metalcrafts and jewelry, and woodworking and furniture design; a master of science for teachers in visual arts (all grades); a master of science in print media; and an advanced certificate in non-toxic intaglio printmaking. Please refer to the *Graduate Bulletin* or the college's website for more information.

Summer course offerings: The college offers a number of summer courses. Please contact the Office of Part-time Enrollment Services or visit the college's website for more information.

School for American Crafts

The programs in the School for American Crafts provide an in-depth artistic approach to crafts with a comprehensive technical education. Our international community of students creates a full spectrum of work, including one-of-a-kind pieces, commissions, limited edition work, sculptural work, and work and designs produced for industry. Students are engaged in an intensive studio environment where personal expression and professionalism flourish.

Ceramics and Ceramic Sculpture, BFA

http://cias.rit.edu/crafts

Don Arday, Administrative Chair
(585) 475-4985, dkafaa@rit.edu

Program overview

As an internationally recognized school that merges art with craft, the School for American Crafts is a leader in crafts education. Our programs provide an educational experience that balances technical expertise with aesthetic expression in the creative and practical understanding of wood, metal, clay, and glass.

Our educational objectives seek to stimulate creative imagination and technical invention, develop knowledge of process and command of skills, and foster appreciation not only of the crafts but also the related arts. The programs strive to inspire the student to seek continual improvement through analysis and self-evaluation.

Curriculum

After successful completion of the four-year program, the bachelor of fine arts degree is awarded in ceramics and ceramic sculpture. The credit requirements for the BFA degree are as follows:

COURSE	QTR. CR. HRS.
Required Craft Major Studio	90
Required Electives	9
Business Practices	9
Open Elective	3
Liberal Arts*	36
General Education	9
Art History	18
Freshman Electives	6
Wellness Education†	0
Total Quarter Credit Hours	**182–185**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Ceramics and ceramic sculpture, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Freshman Elective	6
2013-211, 212, 213	Drawing I, II, III	9
2013-231, 232, 233	2D Design I, II, III	9
2013-241, 242, 243	3D Design I, II, III	9

COURSE		QTR. CR. HRS.
	Open Elective	3
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year‡		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2040-301, 302, 303	Materials and Processes Ceramics, Sophomore	18
2045-311	Concept Drawing	3
2045-312	Craft Technical Drawing	3
2045-xxx	Design Processes	3
	Wellness Education†	0
Third Year		
2040-401, 402, 403	Materials and Processes Ceramics, Junior	18
	Art History Electives§	9
	Open Electives	9
	Liberal Arts*	12
Fourth Year		
2040-501, 502, 503	Materials and Processes Ceramics, Senior	18
2045-511	Planning a Career in the Crafts	3
2045-512	Crafts Promotional Package	3
2045-513	Operating a Business in the Crafts	3
	Open Electives	9-12
Total Quarter Credit Hours		**182-188**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Upon completion of second year, the associate in applied science degree is awarded.
§ Please refer to the list of art history electives.

Art history electives (select three)

Students are required to select three art history electives to broaden their understanding of the historical development of the arts. Art history electives include:

2039-300	History of Design
2039-306	Architecture Interior and Furniture Design I †
2039-307	Architecture Interior and Furniture Design II †
2039-308	Architecture Interior and Furniture Design III †
2039-310	History of Crafts
2039-315	Pre-Columbian Art
2039-316	Florence and Rome 1400-1470
2039-317	Florence and Rome 1470-1520
2039-318	Florence and Rome 1520-1590
2039-320	History of Art Criticism
2039-330	Philosophy in Art
2039-340	Symbols and Symbol Making
2039-355	Latin American Art
2039-360	18th and 19th Century Art
2039-368	Scandinavian Modernism
2039-375	20th Century Art Since 1950
2039-376	Renaissance Painting in Flanders
2039-385	Installation Art
2039-390	Native American Art and Culture
2039-395	Theory and Criticism of 20th Century Art
2039-410	The Art of Art History
2039-415	Thinking About Making
2039-425	Public Art/Public Spaces
2039-430	Dada and Surrealism
2039-433	What Is Post Modernism?
2039-435	Art of the Last Decade
2039-438	Body in Art
2039-440	Conceptual Art
2039-443	Art and Technology: From the Machine Aesthetic to the Cyborg Age
2039-452	Art and Activism
2039-459	Art Central Italy 1250-1400
2039-469	Baroque Rome

† Required for interior design majors and School for American Crafts wood majors.

Additional information

Crafts residency program

The School for American Crafts offers a crafts residence program for participants accepted in the ceramics and ceramic sculpture, glass, metalcrafts and jewelry, and woodworking and furniture design disciplines. Residence positions are limited and will be awarded based on the review of an application, which consists of a portfolio, transcripts, and references. An interview also is required. Accepted studio residents are required to register for at least two credits of independent study during every quarter of residence. These two credits can be taken as an audit, thus reducing the tuition cost to the resident.

Accepted residents are expected to attend their major studio courses during class hours and to contribute up to 10 hours of work per week in the major studio. These work hours will be coordinated and overseen by the faculty in the program area. In exchange, the school will provide workspace, access to facilities, and supportive instruction. The residents are invited to participate in the full range of studio activities.

Residence program participants may be individuals seeking additional studio experience prior to undergraduate or graduate study, early career professionals, or teachers on leave who wish to work in an academic studio environment. The faculty in each program area will make decisions concerning appropriate candidates.

Glass, BFA

http://cias.rit.edu/crafts

Don Arday, Administrative Chair
(585) 475-4985, dkafaa@rit.edu

Program overview

As an internationally recognized school that merges art with craft, the School for American Crafts is a leader in crafts education. Our programs provide an educational experience that balances technical expertise with aesthetic expression in the creative and practical understanding of wood, metal, clay, and glass.

Our educational objectives seek to stimulate creative imagination and technical invention, develop knowledge of process and command of skills, and foster appreciation not only of the crafts but also the related arts. The programs strive to inspire the student to seek continual improvement through analysis and self-evaluation.

Curriculum

Programs of study

After successful completion of the four-year program, the bachelor of fine arts degree is awarded in glass. The credit requirements for the BFA degree are as follows:

COURSE	QTR. CR. HRS.
Required Craft Major Studio	90
Required Electives	9
Business Practices	9
Open Elective	3
Liberal Arts*	36
General Education	9
Art History	18
Freshman Electives	6
Wellness Education†	0
Total Quarter Credit Hours	**180**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Glass, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Freshman Elective	6
2013-211, 212, 213	Drawing I, II, III	9
2013-231, 232, 233	2D Design I, II, III	9
2013-241, 242, 243	3D Design I, II, III	9
	Open Elective	3
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year‡		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2041-301, 302, 303	Materials and Processes Glass, Sophomore	18
2045-311	Concept Drawing	3
2045-312	Craft Technical Drawing	3
2045-xxx	Design Processes	3
	Wellness Education†	0
	Liberal Arts*	12
Third Year		
2040-401, 402, 403	Materials and Processes Glass, Junior	18
	Art History Electives§	9
	Open Electives	9-12
	Liberal Arts*	12
Fourth Year		
2041-501, 502, 503	Materials and Processes Glass, Senior	18
2045-511	Planning a Career in the Crafts	3
2045-512	Crafts Promotional Package	3
2045-513	Operating a Business in the Crafts	3
	Open Electives	9-12
Total Quarter Credit Hours		**188**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Upon completion of second year, the associate in applied science degree is awarded.
§ Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.

Additional information

Crafts residency program

The School for American Crafts offers a crafts residence program for participants accepted in the ceramics and ceramic sculpture, glass, metalcrafts and jewelry, and woodworking and furniture design disciplines. Residence positions are limited and will be awarded based on the review of an application, which consists of a portfolio, transcripts, and references. An interview also is required. Accepted studio residents are required to register for at least two credits of independent study during every quarter of residence. These two credits can be taken as an audit, thus reducing the tuition cost to the resident.

Accepted residents are expected to attend their major studio courses during class hours and to contribute up to 10 hours of work per week in the major studio. These work hours will be coordinated and overseen by the faculty in the program area. In exchange, the school will provide workspace, access to facilities, and supportive instruction. The residents are invited to participate in the full range of studio activities.

Residence program participants may be individuals seeking additional studio experience prior to undergraduate or graduate study, early career professionals, or teachers on leave who wish to work in an academic studio environment. The faculty in each program area will make decisions concerning appropriate candidates.

Metalcrafts and Jewelry, BFA

http://cias.rit.edu/crafts

Don Arday, Administrative Chair
(585) 475-4985, dkafaa@rit.edu

Program overview

As an internationally recognized school that merges art with craft, the School for American Crafts is a leader in crafts education. Our programs provide an educational experience that balances technical expertise with aesthetic expression in the creative and practical understanding of wood, metal, clay, and glass.

Our educational objectives seek to stimulate creative imagination and technical invention, develop knowledge of process and command of skills, and foster appreciation not only of the crafts but also the related arts. The programs strive to inspire the student to seek continual improvement through analysis and self-evaluation.

Curriculum

After successful completion of the four-year program, the bachelor of fine arts degree is awarded in metalcrafts and jewelry. The credit requirements for the bachelor of fine arts are as follows:

COURSE	QTR. CR. HRS.
Required Craft Major Studio	90
Required Electives	9
Business Practices	9
Open Elective	3
Liberal Arts*	36
General Education	9
Art History	18
Freshman Electives	6
Wellness Education†	0
Total Quarter Credit Hours	182–185

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Metalcrafts and jewelry, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Freshman Elective	6
2013-211, 212, 213	Drawing	9
2013-231, 232, 233	2D Design	9
2013-241, 242, 243	3D Design	9
	Open Elective	3
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year‡		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2042-301, 302, 303	Materials and Processes Metals, Sophomore	18
2045-311	Concept Drawing	3
2045-312	Craft Technical Drawing	3
2045-xxx	Design Processes	3
	Wellness Education†	0
	Liberal Arts*	12
Third Year		
2042-401, 402, 403	Materials and Processes Metals, Junior	18
	Art History Electives§	9
	Open Electives	9
	Liberal Arts*	12
Fourth Year		
2042-501, 502, 503	Materials and Processes Metals, Senior	18
2045-511	Planning a Career in the Crafts	3
2045-512	Crafts Promotional Package	3
2045-513	Operating a Business in the Crafts	3
	Open Electives	9-12
Total Quarter Credit Hours		**182-185**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Upon completion of second year, the associate in applied science degree is awarded.
§ Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.

Additional information

Crafts residency program

The School for American Crafts offers a crafts residence program for participants accepted in the ceramics and ceramic sculpture, glass, metalcrafts and jewelry, and woodworking and furniture design disciplines. Residence positions are limited and will be awarded based on the review of an application, which consists of a portfolio, transcripts, and references. An interview also is required. Accepted studio residents are required to register for at least two credits of independent study during every quarter of residence. These two credits can be taken as an audit, thus reducing the tuition cost to the resident.

Accepted residents are expected to attend their major studio courses during class hours and to contribute up to 10 hours of work per week in the major studio. These work hours will be coordinated and overseen by the faculty in the program area. In exchange, the school will provide workspace, access to facilities, and supportive instruction. The residents are invited to participate in the full range of studio activities.

Residence program participants may be individuals seeking additional studio experience prior to undergraduate or graduate study, early career professionals, or teachers on leave who wish to work in an academic studio environment. The faculty in each program area will make decisions concerning appropriate candidates.

Woodworking and Furniture Design, BFA

http://cias.rit.edu/crafts

Don Arday, Administrative Chair
(585) 475-4985, dkafaa@rit.edu

Program overview

As an internationally recognized school that merges art with craft, the School for American Crafts is a leader in crafts education. Our programs provide an educational experience that balances technical expertise with aesthetic expression in the creative and practical understanding of wood, metal, clay, and glass.

Our educational objectives seek to stimulate creative imagination and technical invention, develop knowledge of process and command of skills, and foster appreciation not only of the crafts but also the related arts. The programs strive to inspire the student to seek continual improvement through analysis and self-evaluation.

Curriculum

After the satisfactory completion of two years of study, the associate in occupational studies degree is awarded in woodworking and furniture design. After successful completion of the four-year program, the bachelor of fine arts degree is awarded. The credit requirements for the BFA are as follows:

COURSE	QTR. CR. HRS.
Required Craft Major Studio	90
Required Electives	9
Business Practices	9
Open Elective	3
Liberal Arts*	36
General Education	9
Art History	18
Freshman Electives	6
Wellness Education†	0
Total Quarter Credit Hours	**180**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirements for more information.

AOS program: A two-year associate degree in occupational studies also is offered in woodworking and furniture design. The credit requirements for the AOS degree are as follows:

COURSE	QTR. CR. HRS.
Required Wood Major	36
Drawing	9
2D Design	9
3D Design	9
Advanced Drawing	9
Art History Electives*	9
Professional Business Practices	9
Open Elective	3
Wellness Education†	0
Total Quarter Credit Hours	**93**

* Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.
† Please see Wellness Education Requirements for more information.

Wood, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Freshman Elective	6
2013-211, 212, 213	Drawing I, II, III	9
2013-231, 232, 233	2D Design I, II, III	9
2013-241, 242, 243	3D Design I, II, III	9
	Open Elective	3
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year‡		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2044-301, 302, 303	Materials and Processes Wood, Sophomore	18
2045-311	Concept Drawing	3
2045-312	Craft Technical Drawing	3
2045-xxx	Design Processes	3
	Wellness Education†	0
	Liberal Arts*	12
Third Year		
2044-401, 402, 403	Materials and Processes Wood, Junior	18
2039-306, 307, 308	Architecture, Interior Furniture Design History	9
	Open Electives	9
	Liberal Arts*	12
Fourth Year		
2044-501, 502, 503	Materials and Processes Wood, Senior	18
2045-511	Planning a Career in the Crafts	3
2045-512	Crafts Promotional Package	3
2045-513	Operating a Business in the Crafts	3
	Open Electives	9-12
Total Quarter Credit Hours		**182-185**

* Please see Liberal Arts General Education Requirements for more information.

† Please see Wellness Education Requirement for more information.

‡ Upon completion of second year, the associate in applied science degree is awarded.

Additional information

Crafts residency program

The School for American Crafts offers a crafts residence program for participants accepted in the ceramics and ceramic sculpture, glass, metalcrafts and jewelry, and woodworking and furniture design disciplines. Residence positions are limited and will be awarded based on the review of an application, which consists of a portfolio, transcripts, and references. An interview also is required. Accepted studio residents are required to register for at least two credits of independent study during every quarter of residence. These two credits can be taken as an audit, thus reducing the tuition cost to the resident.

Accepted residents are expected to attend their major studio courses during class hours and to contribute up to 10 hours of work per week in the major studio. These work hours will be coordinated and overseen by the faculty in the program area. In exchange, the school will provide workspace, access to facilities, and supportive instruction. The residents are invited to participate in the full range of studio activities.

Residence program participants may be individuals seeking additional studio experience prior to undergraduate or graduate study, early career professionals, or teachers on leave who wish to work in an academic studio environment. The faculty in each program area will make decisions concerning appropriate candidates.

Woodworking and Furniture Design, AOS

Don Arday, Chair
(585) 475-4985, dkafaa@rit.edu

Program overview

As an internationally recognized school that merges art with craft, the School for American Crafts is a leader in crafts education. The school's programs provide an educational experience that balances technical expertise with aesthetic expression in the creative and practical understanding of wood, metal, clay, and glass. Educational objectives seek to stimulate creative imagination and technical invention, develop knowledge of process and command of skills, and foster appreciation not only of the crafts but also the related arts. The programs strive to inspire the student to seek continual improvement through analysis and self evaluation.

Curriculum

Wood, AOS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2013-211, 212, 213	Drawing I, II, III	9
2013-241, 242, 243	3D Design I, II, III	9
2044-301, 302, 303	Materials and Processes Wood, Sophomore	18
2045-311	Concept Drawing	3
2045-312	Craft Technical Drawing	3
2045-xxx	Crafts Design Process	3
	Open Elective	3
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2013-231, 232, 233	2D Design I, II, III	9
2039-306, 307, 308	Architecture, Interior Design, and Furniture Design History	9
2044-401, 402, 403	Materials and Processes Wood, Junior	18
2045-511	Planning a Career in the Crafts	3
2045-512	Crafts Promotional Package	3
2045-513	Operating a Business in the Crafts	3
	Wellness Education†	0
Total Quarter Credit Hours		**95**

† Please see Wellness Education Requirement for more information.

School of Art

The School of Art educates students to be fine artists and illustrators who contribute to their professions, communicate effectively within their disciplines, have a lifelong attitude of inquiry, and make a positive impact on society. The School of Art fulfills this mission through its nationally recognized programs. We promote

an innovative educational community that balances expression, imaginative problem solving, aesthetic understanding, critical thinking, and creativity within a studio environment. Gallery r, an art gallery in downtown Rochester operated by School of Art students, solidifies the learning experience by bringing the work of our students to the greater Rochester community.

The educational objectives of the School of Art are to encourage imagination, creative ability, and artistic discrimination; develop the skills essential for professional competence; relate the various arts and help students find the means to enjoy them; and incorporate studies in the College of Liberal Arts for social and cultural growth, inspiring students to make maximum contributions as creative artists and citizens.

Programs of study offered in the School of Art include illustration, medical illustration, and fine arts studio. Beginning in the second year, students pursue their major course of study. The first year forms the foundation for the major concentration with courses required in drawing and two- and three-dimensional design.

Illustration, BFA

http://cias.rit.edu/art

Don Arday, Administrative Chair
(585) 475-4985, dkafaa@rit.edu

Program overview

Illustration majors solve communication problems by translating concepts and ideas into images. They study traditional and electronic media and design to prepare themselves for their professional goals.

Curriculum

General credit requirements

The credit requirements for students admitted in the illustration program are as follows:

COURSE	QTR. CR. HRS.
Required Major (medical illustration, illustration, fine arts studio)	93–94
Professional Electives	15
Open Electives	21
Liberal Arts	36
General Education	12
Art History	9
Art History/General Education	9
Total Quarter Credit Hours	**196**

A freshman kit is suggested for art, design, and craft students; it costs approximately $400. Students are generally responsible for the cost of additional supplies.

Electives*

Students have the opportunity to select electives that enhance their studies or allow them to pursue an area of personal or professional interest. Electives are available in the following areas:

Graphic Design
Illustration
Graphic Visualization
Industrial Design
Interior Design
Fine Arts Studio
Environmental Design
Ceramics
Glass
Metals
Textiles
Woodworking
Introduction to Filmmaking
Still Photography
Imaging Technology

* Electives prerequisite: Completion of foundation program or permission of instructor. Additional selections offered as special topics.

Illustration, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Foundation Studies:	
2013-215	Foundation Vector Imaging	1
2013-216	Foundation Raster Imaging	1
	Freshman Electives	6
2013-211, 212, 213	Drawing I, II, III	9
2013-231, 232, 233	2D Design I, II, III	9
2013-241, 242, 243	3D Design I, II, III	9
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
	Liberal Arts*	12
	Wellness Education†	0
	Illustration:	
2019-301	Illustration I	3
2019-306	Head, Hands, Facial Expressions	3
2019-311	Digital Illustration I	3
2019-345	Illustration Techniques I	3
2019-361	Dimensional Illustration I	3
	Studio Electives	9
Third Year		
	Art History Electives§	9
	Studio Electives	6
	Open Elective	3-4
	Liberal Arts*	12
	Illustration:	
	Junior-level courses from major concentration	12
	Program electives	6
Fourth Year		
	Studio Elective	3
	Open Electives	18-24
	Illustration:	
2019-513	Illustration Marketing and Business	3
2019-563	Portfolio Preparation	3
	Senior-level courses from major concentration	15
Total Quarter Credit Hours		**191**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
§ Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.

Fine Arts Studio, BFA

http://cias.rit.edu/art

Don Arday, Administrative Chair
(585) 475-4985, dkafaa@rit.edu

Program overview

Fine arts studio serves the student who is interested in a career in the fine arts across a variety of two- and three-dimensional disciplines and media, both traditional and technological. While painting, printmaking, and sculpture are the areas of greatest emphasis, new forms of expression are encouraged through course discipline work.

Curriculum

General credit requirements

The credit requirements for students admitted in the fine arts studio program are as follows:

COURSE	QTR. CR. HRS.
Required Major (medical illustration, illustration, fine arts studio)	93–94
Professional Electives	15
Open Electives	21
Liberal Arts	36
General Education	12
Art History	9
Art History/General Education	9
Total Quarter Credit Hours	**196**

A freshman kit is suggested for art, design, and craft students; it costs approximately $400. Students are generally responsible for the cost of additional supplies.

Electives*

Students have the opportunity to select electives that enhance their studies or allow them to pursue an area of personal or professional interest. Electives are available in the following areas:

Graphic Design
Illustration
Graphic Visualization
Industrial Design
Interior Design
Fine Arts Studio
Environmental Design
Ceramics
Glass
Metals
Textiles
Woodworking
Introduction to Filmmaking
Still Photography
Imaging Technology

* Electives prerequisite: Completion of foundation program or permission of instructor. Additional selections offered as special topics.

Fine arts studio, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Foundation Studies:	
2013-215	Foundation Vector Imaging	1
2013-216	Foundation Raster Imaging	1
	Freshman Electives	6
2013-211, 212, 213	Drawing I, II, III	9
2013-231, 232, 233	2D Design I, II, III	9
2013-241, 242, 243	3D Design I, II, III	9
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
	Liberal Arts*	12
	Wellness Education†	0
	Fine Arts Studio:	
2021-xxx	Introduction to Fine Arts Drawing	3
2021-305	Introduction to Painting	3
2021-xxx	Intermediate Painting	3
2021-xxx	Figure in Motion	3
2021-315	Introduction to Non-Toxic Printmaking	3
2021-xxx	Intermediate Non-Toxic Printmaking	3
2021-xxx	Introduction to Sculpture	3
2021-383	Intermediate Sculpture	3
	Studio Elective	3
Third Year		
	Art History Electives§	9
	Studio Electives	6
	Open Elective	3-4
	Liberal Arts*	12
	Fine Arts Studio:	
	Junior-level courses from Fine Arts Studio I	9
2021-471	Sculpture Ideation and Series	3
	Figure Studies course	3
Fourth Year		
	Studio Elective	3
	Open Electives	18-24
	Fine Arts Studio:	
2021-572	Business Practices for the Fine Arts	3
	Senior-level courses from Fine Arts Studio II	15
Total Quarter Credit Hours		**182-186**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
§ Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.

Medical Illustration, BFA

http://cias.rit.edu/art

Don Arday, Administrative Chair
(585) 475-4985, dkafaa@rit.edu

Program overview

Medical illustration students learn to provide visual support for communications and instruction in medicine and allied health sciences. Graduating students rely on their course work in biology, anatomy, and art in their professional roles.

Curriculum

General credit requirements

The credit requirements for students admitted in the medical illustration program are as follows:

COURSE		QTR. CR. HRS.
	Required Major (medical illustration, illustration, fine arts studio)	93–94
	Professional Electives	15
	Open Electives	21
	Liberal Arts	36
	General Education	12
	Art History	9
	Art History/General Education	9
Total Quarter Credit Hours		**196**

A freshman kit is suggested for art, design, and craft students; it costs approximately $400. Students are generally responsible for the cost of additional supplies.

Electives*

Students have the opportunity to select electives that enhance their studies or allow them to pursue an area of personal or professional interest. Electives are available in the following areas:

Graphic Design
Illustration
Graphic Visualization
Industrial Design
Interior Design
Fine Arts Studio
Environmental Design
Ceramics
Glass
Metals
Textiles
Woodworking
Introduction to Filmmaking
Still Photography
Imaging Technology

*Electives prerequisite: Completion of foundation program or permission of instructor. Additional selections offered as special topics.

Medical illustration, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Foundation Studies:	
2013-215	Foundation Vector Imaging	1
2013-216	Foundation Raster Imaging	1
	Freshman Electives	6
2013-211, 212, 213	Drawing I, II, III	9
2013-231, 232, 233	2D Design I, II, III	9
2013-241, 242, 243	3D Design I, II, III	9
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
	Liberal Arts*	12
	Wellness Education†	0
	Medical Illustration:	
2019-311	Digital Illustration I	3
1001-201	General Biology	4

COURSE		QTR. CR. HRS.
1004-212, 259	Human Biology II, III	8
	Choose three of the following courses:	9
2019-301	Illustration I	
2019-306	Head, Hands, Facial Expressions	
2019-323	Zoological and Botanical Illustration	
2019-345	Illustration Techniques I	
2021-xxx	Figure in Motion	
Third Year		
	Art History Electives§	9
	Studio Electives	6
	Open Elective	3-4
	Liberal Arts*	12
	Medical Illustration:	
2020-431, 432	Human Gross Anatomy	8
2019-304	Anatomical Figure Drawing	3
2020-407	Anatomical Wet Media Illustration	3
2020-406	Anatomical Drawing and Illustration	3
2020-408	Computer Application Anatomical Illustration	3
	Anatomical Drawing II	3
2020-410	Anatomical Illustration Mixed Media	3
Fourth Year		
	Studio Elective	3
	Open Electives	18-24
	Medical Illustration:	
2020-501	Advanced Medical Illustration	3
2020-504	Surgical Drawing and Illustration I	3
2020-505	Surgical Drawing and Illustration II	3
2020-506	Computer Animation in Medical Illustration	3
2020-507	Marketing and Business Practices	3
2020-508	Medical Illustration Portfolio	3
Total Quarter Credit Hours		**189-196**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
§ Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.

School of Design

The School of Design provides quality design education and preparation for professional practice. Our internationally recognized programs educate students to be designers who make valuable contributions to their professions, communicate effectively, maintain a lifelong attitude of inquiry, and make a positive impact on society. Within the School of Design, programs, faculty, and students form an inquisitive and dynamic educational community in which creativity, critical thinking, innovative problem solving, aesthetic understanding, cross-disciplinary study, professionalism, and social responsibility are explored, cultivated, and promoted.

3D Digital Graphics, BFA

cias.rit.edu/design/

Marla Schweppe, Program Chair
(585) 475-2754, mkspph@rit.edu

Program overview

Students in the 3D digital graphics program will learn to use 3D computer graphics in computer and video games, medical and scientific simulations, data visualization, models for architects

and engineers, motion or broadcast graphics, instructional media accident reconstruction, and more. Traditional design skills using commercial 3D software are integrated with principles relating to time, motion, and lighting.

Curriculum

3D digital graphics, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2014-221	Introduction to 3D DG Modeling	4
2014-222	Introduction to 3D DG Materials	4
2014-223	Introduction to 3D DG Motion	4
2014-231	Technical Drawing	2
2014-233	Drawing Motion	3
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2083-206	Imaging for New Media	4
	Liberal Arts*	12
	Open Electives	6-8
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2014-363	Digital Video for MM	4
2012-201	Basic Design I	2
2014-343	Flowcharts and Storyboards	2
2019-304	Anatomical Drawing I	3
4003-241	Problem-Based Introduction to CS	4
4003-242	Data Structure Problem Solving	4
	Major Electives‡	12
	Liberal Arts*	12
Third Year		
2014-411	Project Planning	2
2014-432	Senior Thesis Assist	4
2014-463	Introduction to the Production Pipeline	4
	Major Electives‡	22
	Liberal Arts*	12
	Open Elective	3-4
Fourth Year		
2014-511, 512	Senior Thesis I, II	12
2014-513	Portfolio Development	2
	Major Electives‡	12
2014-xxx	History of Computer Graphics	3
	Art History Electives§	6
	Open Electives	9-12
Total Quarter Credit Hours		**180**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please refer to the list of major electives offered each quarter.
§ Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.

Graphic Design, BFA

http://cias.rit.edu/design

Nancy Ciolek, Program Chair
(585) 475-7472, nacfad@rit.edu

Program overview

Graphic design is the study and practice of communicating ideas and information through printed, environmental, and digital presentations. Typography and images are integrated to express messages that interest, inform, and persuade intended audiences. With the addition of visual movement, navigation, and sound, digital presentations also are developed. Using research, critical thinking, creativity, and a range of problem-solving principles, graphic designers solve complex visual communication problems within the constraints of time, space, budget, and technology. Areas of study include publication design, signage and environmental design, corporate identity, interactive media, packaging design, and information design.

The school 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.

Curriculum

The School of Design offers a BFA program in graphic design. The curriculum integrates major courses, studio and open electives, the liberal arts, and art/design history. Computer skills, design perspectives, career preparation, and exposure to the related areas of publishing, photography, engineering, and information technology are integrated into the curriculum.

Graphic design, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Foundation Studies:	
	Freshman Elective	2
2010-216	Vector Imaging	2
2010-211	Raster Imaging	2
2013-211, 212, 213	Drawing I, II, III	9
2013-231, 232	2D Design I, II	6
2013-241, 242, 243	3D Design I, II, III	9
2010-301	Elements of Graphic Design	3
2015-222	Design Survey	2
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2010-302	Typography I	3
2010-313	Introduction to Time-Based Design	3
2010-401	Typography II	3
2010-402	Imagery in Design	3
	Studio Electives	9-12
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
2010-471	History of Graphic Design	3
	Art History Electives§	6
2010-403	Symbol and Icon Design	3
2010-404	Design for Publications	3
2010-405	Information Design	3
2010-406	Environmental Design	3
2010-512	Introduction to Interactive Media Design	3
2010-501	Career Skills and Professional Practice	2
2010-561	Introduction to Web Design	3
	Studio Electives	9
	Liberal Arts*	12

COURSE		QTR. CR. HRS.
Fourth Year		
	Open Electives	18-24
Students complete an additional eight senior-level courses, chosen from the list below:		
2010-502	Corporate Design	3
2010-504	Design Systems	3
2010-505	Advertising Design	3
2010-506	Concept and Symbolism	3
2010-507	Design for Marketing	3
2010-511	Advanced Information Design	3
2010-512	Introduction to Interactive Media Design	3
2010-513	Senior Project	3
2010-514	Editorial Design	3
2010-523	Senior Internship	3
2010-524	Portfolio Development and Presentation	3
2010-562	Advanced Web Design	3
Total Quarter Credit Hours		**184**

* Please see Liberal Arts General Education Requirements for more information.

† Please see Wellness Education Requirement for more information.

§ Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.

Industrial Design, BFA

http://cias.rit.edu/design

Stan Rickel, Program Chair
(585) 475-4745, srrfaa@rit.edu

Program overview

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.

The school 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.

Curriculum

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

Industrial design, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Foundation Studies:	
	Freshman Electives	2
	ID Freshman Elective	2
2010-211	Vector Imaging or 2010-216 Raster Imaging	2
2013-211, 212, 213	Drawing I, II, III	9

COURSE		QTR. CR. HRS.
2013-231, 232, 233	2D Design I, II, III	9
2013-241, 242, 243	3D Design I, II, III	9
2015-222	Design Survey	2
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year‡		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2035-306	Technical Drawing	2
2035-311	Model Making	2
2035-321, 322, 323	Graphic Visualization I, II, III	6
2035-331, 332	Form I, II	4
2035-348	Sophomore Design Studio	4
	Studio Electives	9-12
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
2035-442	History of Industrial Design	3
	Art History Electives§	6
2035-405	Materials and Process Applications	3
2035-406	Consumer Product Design I	3
2035-407	Human Factors Applications	3
2035-408	Equipment Design	3
2035-410	Consumer Product Design II	3
2035-418	CAD Applications	3
	Studio Electives	9
	Liberal Arts*	12
Fourth Year		
2035-510	Professional Practice	3
2035-513	Career Planning	3
	Choose one of the following:	
2035-506	Design Collaborative	3
2035-498	Internship	3
	Choose two of the following:	
2035-508	Furniture Design	3
2035-512	Advanced Product Design	3
2035-522	Toy Design	3
2035-527	Packaging Design	3
	Open Electives	18-24
Total Quarter Credit Hours		**196**

*Please see Liberal Arts General Education Requirements for more information.

† Please see Wellness Education Requirement for more information.

‡ Upon completion of the second year, the associate in applied science degree is awarded.

§ Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.

Interior Design, BFA

http://cias.rit.edu/design

Charles Lewis, Program Chair
(585) 475-6357, cflfaa@rit.edu

Program overview

Interior design is the creative integration of form, materials, function, and aesthetics within interior space. Students develop an understanding of, and sensitivity to, history, future technology, environment, economics, architecture, and societal needs by exploring projects that develop aesthetic understanding, technical proficiencies, and preparation for professional certification and licensing. The program is accredited by the Council for Interior Design Accreditation.

The school 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.

Curriculum

The School of Design offers a BFA program in interior design. The curriculum integrates major courses, studio and open electives, the liberal arts, and art/design history. Computer skills, design perspectives, career preparation, and exposure to the related areas of publishing, photography, engineering, and information technology are integrated into the curriculum.

Interior design, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Foundation Studies:	
	Freshman Electives	4
2010-211	Vector Imaging or 2010-216 Raster Imaging	2
2013-211, 212, 213	Drawing I, II, III	9
2013-231, 232, 233	2D Design I, II, III	9
2013-241, 242, 243	3D Design I, II, III	9
2015-222	Design Survey	2
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
Majors must take each of the following courses to complete the sophomore year (prerequisite: completion of foundation studies):		
2015-305	Architectural Drawing	3
2015-306	Perspective Drawing	3
2015-307	Introduction to Interior Design	3
2015-308	Computer-Aided Design Applications	3
2015-311	Model Building and Human Dimension	3
	Studio Electives	9-12
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
2039-306, 307, 308	History of Architecture and Furniture	9
Majors must take each of these courses in sequence to complete junior year in interior design (prerequisite: completion of sophomore year):‡		
2015-404	Hospitality Design	3
2015-405	Application of Color and Light	3
2015-406	Retail Design	3
2015-407	Building Construction Systems	3
2015-408	Office Design and Planning	3
2015-409	Interior Specifications	3
	Studio Electives	9
	Liberal Arts*	12
Fourth Year		
Majors must take these courses to complete senior year in interior design (prerequisite: completion of junior year):‡		
2015-504	Multipurpose/Multistory Design	4
2015-505	Building Codes and Regulations	2
2015-506	Environmental Control Applications	3
2015-507	Healthcare Design	4
2015-508	Interior Design Business Practices	2
2015-509	Career Planning	2

COURSE		QTR. CR. HRS.
2015-510	Working Drawings	4
2015-511	Special Projects	3
	Open Electives	18-24
Total Quarter Credit Hours		**193**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Additional special topics courses may be required.

New Media Design and Imaging, BFA

http://cias.rit.edu/design

Adam Smith, Program Chair
(585) 475-4552, aesfaa@rit.edu

Program overview

The new media design and imaging program was created in response to the growing demand for college graduates with strong digital imaging skills, highly refined design sensibilities, and the ability to visualize concepts in two- and three-dimensional motion graphics and interactive projects. These students explore all forms of digital media as well as traditional imaging techniques to become creative and skilled multimedia designers. Students gain experience in concept development, design development, digital sound, two- and three-dimensional animation, interactivity, programming, digital photography and video, multimedia project development, and digital imaging. They also explore gaming, entertainment multimedia, virtual reality, and other facets of new media. Students prepare and deliver projects executed in all of the major media formats, including mobile broadcast and the Web. This program shares courses with the new media option of the interactive development program in the B. Thomas Golisano College of Computing and Information Sciences. This is an exciting and dynamic interdisciplinary curriculum in step with cutting-edge technology.

Curriculum

New media design and imaging, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2013-211, 212	Drawing I, II	6
2013-231, 232	2D Design I, II	6
2009-213	Elements of Graphic Design for New Media	3
2009-311	Typography for New Media	3
2009-313	Introduction to Computer Imaging	3
2009-411	Time-Based Imaging	4
2065-217	Digital Video for Multimedia	4
2009-221	Principles of Imaging for New Media	4
2009-xxx	Introduction to Web	4
	Studio Elective	3
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2009-212	3D Form and Space	3
2009-312	Information Design for New Media	3
2009-328	Introduction to Digital Animation	4

COURSE		QTR. CR. HRS.
2009-401	Advanced Design Networking	3
4080-230	Introduction to Programming for New Media	4
4080-231	Programming II for New Media	4
4080-309	Introduction to Web Development	4
	Studio Elective	3
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
	Art History Electives§	9
2009-323	Design of Graphical User Interface	4
2009-402	Emerging Multimedia Design and Imaging Tools	3
2009-403	Dynamic Information Design	3
2009-412	Dynamic Typography	3
2009-413	Advanced 3D Techniques	3
	New Media Elective	3
	Open Elective	3
	Liberal Arts*	12
Fourth Year		
2009-501	Dynamic Persuasion	3
2009-511	QTVR and Multimedia Design	3
	Choose two of the following:	
2009-511	QTVR and Multimedia Design	3
2009-xxx	Experimental New Media	3
	Studio Electives	6
2009-516	Career Skills in New Media	3
2009-542, 543	New Media Team Project I, II	8
	Open Electives	12-16
Total Quarter Credit Hours		**191**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
§ Please refer to the list of art history electives under Ceramics and Ceramic Sculpture.

School of Film and Animation

Motion Picture Science (formerly Digital Cinema), BS

http://cias.rit.edu/film/digitalcinema/digital_cinema.html

David Long, Program Chair
(585) 475-5724; dllppr@rit.edu

Program overview

The BS degree program in motion picture science provides a science- and engineering-based education in the fundamental imaging technologies used for the motion picture industry. By joining a core curriculum in practical filmmaking from the College of Imaging Arts and Sciences and image science from the College of Science, this program trains 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 of the BS program will enjoy a variety of career opportunities, from feature film and television post-production to imaging equipment design and essential motion imaging technology research and development.

Curriculum

Motion picture science, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1016-281, 282, 283	Project-Based Calculus I, II, III	12
1017-311, 312	University Physics I, II	10
2065-201	Introduction to Film Production	4
2065-202	Digital Film Production	4
2065-222	Film Language	4
2065-231	Film/Video Materials and Technology,	4
	Liberal Arts*	12
	Wellness Education†	0
1720-050, 051	First-Year Enrichment	2
Second Year		
1017-313	University Physics III	4
1051-211	Programming for Imaging Science	4
1051-320	Linear Math for Imaging	4
1051-350	Vision and Psychophysics	4
1051-370	Radiometry	4
2065-316	Production Process	6
2065-331	Introduction to Animation I	4
2065-344	Post-production Processes	4
2065-452	Sound Recording	3
	Liberal Arts*	8
	Wellness Education†	0
1051-361	Digital Image Process I	4
Third Year		
1051-303	Geometric Optics	4
1051-402	Color Science	4
1051-462	Digital Imaging Processing II	4
2065-361	Introduction to 3D Computer Animation	4
2065-411, xxx	Image Capture and Production Technology I, II	8
2065-xxx	Special Effects and Digital Post	4
	Film/Animation History and Aesthetics	3
	Free Elective	4
	Liberal Arts*	8
Fourth Year		
2065-507, 508, 509	Senior Project 1, 2, 3	9
2065-xxx	Film Projection and Digital Cinema	4
	Film/Animation Electives	9-12
	Film/Animation History and Aesthetics	3
	Free Electives	12
	Liberal Arts*	8
Total Quarter Credit Hours		**192**

*Please see Liberal Arts General Requirements for more information.
†Please see Wellness Education Requirement for more information.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Professional student organizations

The school 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. The school also is a certified Apple Training Center for Professional Applications.

Film and Animation, BFA

http://cias.rit.edu/film/

Malcolm Spaull, Administrative Chair
(585) 475-2779, mgscdm@rit.edu

Program overview

The BFA degree program in film and animation is for students who recognize the moving image as an expressive force uniquely important to modern life. The school will develop students' production skills and acquaint each with film, video, and animation as creative media.

Curriculum

The curriculum emphasizes production, with students beginning their first quarter working in 16mm film and animation and continuing with production work every quarter until they graduate. Students may choose to specialize in motion pictures, video, or traditional or computer animation. The school's goal is to prepare students who are able 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 the 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 in the film and animation program produce several short films or animations by working through all phases of production: scripting, production planning, budgeting, shooting, 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. Graduates of the BS program will enjoy a variety of career opportunities, from feature film and television post-production to imaging equipment design and essential motion imaging technology research and development.

Film and animation, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2065-201	Introduction to Film Production	4
2065-202, 203	Digital Production I, II	8

COURSE		QTR. CR. HRS.
2065-206	Story and Structure	2
2065-216	Fundamentals of Computer Imaging	3
2065-221	Materials and Processes of Moving Image	2
2065-222	Film Language	4
2065-263	Single-Frame Motion	2
2065-331	Introduction to Animation	4
2065-342	Scriptwriting I	3
	Liberal Arts*	12
1720-050, 051	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2065-344	Post-production Processes	4
	Liberal Arts*	12
	Wellness Education†	0
Production Emphasis:		
2065-316	Production Processes	5
2065-324	Live-Action Pre-production	3
2065-343	Scriptwriting II	3
	Film/Video Production Workshop	4
	Film Animation History and Aesthetics	12
	Film/Animation Electives	9-12
Animation Emphasis:		
2065-352	Animation Pre-production	4
2065-427	2D Computer Animation	4
2065-457	Introduction to 3D Modeling Animation	4
2013-211, 212	Foundation Drawing	6
Choose one of the following:		4
2065-333	Animation Production Workshop	
2065-447	Experimental Animation Workshop	
Choose one of the following:		3
2013-213	Foundation Drawing	
2013-231	2D Design	
2013-241	3D Design	
	Film/Animation History and Aesthetics	6-8
	Film/Animation Elective	3-4
Third Year		
2065-413	Senior Project Seminar	1
	Open Electives	8
	Liberal Arts*	12
Production Emphasis:		
Choose one of the following:		4
2065-387	Writing the Short Film	
2065-376	Dramatic Structure for Film/TV	
Choose one of the following:		8
	Production Workshop: Documentary/ Experimental/Fiction	
2065-387	Writing the Short Film	
	Film/Animation History and Aesthetics	
	Film/Animation Electives	
Animation Emphasis:		
Choose one of the following:		4
2065-361	Introduction to 3D Computer Animation I	
2065-478	3D Computer Animation II	
2065-332	Advanced Animation Tools	
2065-363	Scriptwriting for Animation	3
2065-437	Advanced Animation Workshop I	4
2065-438	Advanced Animation Workshop II	4
	Film/Animation History and Aesthetics	3-4
	Film/Animation Electives	6-8
Fourth Year		
	Open Elective	4
	Liberal Arts*	9-12

COURSE		QTR. CR. HRS.
Production Emphasis and Animation Emphasis:		
2065-507, 508, 509	Senior Project 1, 2, 3	12
2065-512	Senior Forum	2
2065-513	Career Preparation	2
	Film/Animation History and Aesthetics	3-4
	Film/Animation Electives	9-12
Total Quarter Credit Hours		**184-195**

* Please see Liberal Arts General Education Requirements for more information.

† Please see Wellness Education Requirement for more information.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Portfolio guidelines: Please see portfolio guidelines listed in the introductory section for this college for specific instructions on portfolio submission for applicants to the film and animation program. 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, storyboards, and original music.

An inventory sheet or table of contents should accompany portfolios. Videos should be on mini-DV, DVCAM, VHS, DVD, or DV-DROM. The movie files on a DVDROM must be in QuickTime or MPEG2 format. No AVI or other digital video architectures files. NTSC or ATSC (HD) only. Still images should be on DVDROM or CDROM in jpeg or tiff format. Slides in 35mm format are acceptable, but they must be presented in sleeves. No boxes or carousel trays will be accepted. Sound design should be no longer than 10 minutes in length and must be presented in CD format.

Writing policy

The School of Film and Animation has a minimum writing requirement within each of its degree programs. A copy of the school's official writing competency policy may be obtained from the department or from the Office of Academic Student Services.

Additional information

Graduate programs

The School of Film and Animation offers an MFA degree in animation with options in 2D animation, 3D animation, scriptwriting, and live action production. The program is described in the *Graduate Bulletin*, available from the Office of Graduate Enrollment Services at www.rit.edu/programs/grad/.

Summer session

The School of Film and Animation offers a limited selection of courses during the summer quarter. These range from beginning courses to those requiring a substantial background. For information on summer courses, please e-mail the school: sofa@rit.edu.

Memberships

The school 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. The school also is a certified Apple Training Center for Professional Applications.

School of Photographic Arts and Sciences

The programs of the School of Photographic Arts and Sciences are designed to prepare students for a wide range of careers in photographic and related imaging fields. Studies in photographic practices provide both technical and creative experiences for visual problem solving. The principles of imaging are taught through courses investigating the tools and processes used to make pictorial-, data-, and information-based images. All first-year BFA and BS students are required to have their own handheld small- or medium-format digital SLR camera and a professional light meter. Students are encouraged to take advantage of Rochester's historic connection with photography. A comprehensive schedule of programs, including exhibitions, lectures, and seminars, is offered by the city's array of cultural institutions.

Biomedical Photographic Communications, BS

http://biomed.rit.edu/

Christye Sisson, Program Chair
(585) 475-4228, cpspph@rit.edu

Program overview

RIT has the only program in the nation that grants a bachelor of science degree in biomedical photographic communications, which combines photography, visual communications, and science. The program prepares students for photographic and imaging careers in various institutions such as forensic labs, pharmaceutical companies, and military bases, or in ophthalmic photography, the only form of diagnostic photography. Because of the unique blend of courses, recent graduates have been very successful finding positions not only in biomedical imaging but also in the electronic imaging field as technical service representatives, multimedia producers, and Web publishers.

During the first two years of the program, students receive a solid foundation in digital photography and desktop and Web publishing. Included in these classes are topics such as close-up and high-magnification photography, studio lighting, ethics, ophthalmic photography, and imaging technologies. Students also take biology, liberal arts, and general education courses. In the third and fourth years the curriculum becomes more flexible, allowing students to choose elective courses and build a photographic concentration from a wide variety of courses taught in the College of Imaging Arts and Sciences, the College of Science, and the B. Thomas Golisano College of Computing and Information Sciences. This flexibility, coupled with the personal attention of faculty advisers, allows students to focus on their career and educational goals. It is not uncommon for graduates to continue their studies in graduate school programs in imaging, medicine, or information technology.

Careers

Since 1968, various visual communication companies have actively recruited most of the program's nearly 600 graduates. Many of our graduates have become directors and leaders in their respective

institutions and companies. Today, the biomedical photographic communications program boasts a placement rate of well over 85 percent.

Curriculum

Biomedical photographic communications, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2061-xxx, xxx, xxx	Biomedical Photo I, II, III	15
2076-211, 212, 213	Materials and Processes of Photography	9
2061-213	Survey of Biomedical Photography	1
	General Education	4
	Math or Science‡	8
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
	Cooperative Education (summer)	Co-op
Second Year		
2061-301, 302, 303	Applications of Scientific Photography I, II, III	12
2061-311, 313	Preparation of Biomedical Visuals I, III	6
	General Education	8
	Open Elective	4
	Math or Science‡	4
	Liberal Arts*	12
	Wellness Education†	0
	Cooperative Education (optional)	Co-op
Third Year		
2061-316	Digital Media in Biomedical Photography I	4
2061-361	Web Design Using Photography	4
2061-403	Advanced Photography in Biomedical Communication	4
	Open Electives	12
	Math or Science‡	8
	General Education	4
	Liberal Arts*	12
Fourth Year		
2061-501, 502, 503	Photographic Concentration	12
2061-401	AV Production I	4
2061-402	Advanced Photography in Biomedical Communication	4
	General Education	18
	Open Electives	4-6
Total Quarter Credit Hours		**191**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ The math or science requirement includes: Human Biology I, II, or III (1004-211, 212, or 213) (8 credits); Medical Terminology (1026-301) (3 credits); or Human Biology I, II, III (1004-211, 212, or 213) (8 credits).

Cooperative education

At least one cooperative education experience or internship is required for graduation. Co-ops are an opportunity for students to gain experience in their field and are generally completed between their second and third academic years. Co-ops are full- or part-time paid positions usually eight to 10 weeks in length. The Office of Cooperative Education and Career Services can assist students in identifying co-op placements and opportunities.

Imaging and Photographic Technology, BS

http://phototech.rit.edu/

Christye Sisson, Program Chair
(585) 475-4228, cpspph@rit.edu

Program overview

The imaging and photographic technology curriculum blends experiences in contemporary digital photography with a diverse and specialized education exploring technical, professional, or scientific imaging applications that lead to careers as professional photographers or positions that use related imaging technologies. Imaging and technical skills are complemented by courses in mathematics, computing, physics, technical writing, and the liberal arts.

Various aspects of photography are investigated across all four years of the program, with explorations in black-and-white photography; color photography; and specialized areas such as high-speed, architectural, and nature photography. Some required courses include Photographic Sensitometry (2076-301); Photographic Chemistry (2076-302); Photographic Optics (2076-303); Digital Image Processing I (2076-481); and courses in color theory, color measurement, and imaging systems. Beginning in the first year, electronic imaging and computing are emphasized in all courses.

Third- and fourth-year students can develop expertise in professional or technical fields by selecting electives or minors from across the university. Within the department electives are available in holography, photonics, scanning electron microscopy, photo instrumentation, technical photography, imaging chemistry, still photography, graphic arts, optics, imaging systems, business, science, and engineering. Opportunities for independent study also are available. While each student's core program is similar, graduates' academic backgrounds often vary with their choice of concentration electives.

Curriculum

Imaging and photographic technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2076-xxx, xxx, xxx	Photography I, II, III	15
2076-211, 212, 213	Materials and Processes of Photography	9
1016-230	Precalculus	4
1016-231	Calculus for Engineering Technology I‡	4
1016-319	Data Analysis	4
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2076-301	Photographic Sensitometry	4
2076-302	Technical Photographic Chemistry	4
2076-303	Photographic Optics	4
2076-5xx	IDL Programming for Photography	4
1051-350	Vision and Psychophysics	4
2076-313	Color Measurement	4
1017-211, 212, 213	College Physics I, II, III§	9
1017-271, 272, 273	College Physics I, II, III Lab§	3
	Liberal Arts*	12
	Cooperative Education (summer quarter)	Co-op

COURSE		QTR. CR. HRS.
Third Year		
2076-412	Color Management for Photographers	4
2076-491	Digital Imaging Processing	4
2076-411	Imaging Systems	4
0502-444	Technical Writing	4
	General Education Elective	4
	Liberal Arts*	12
	Open Electives	12
	Cooperative Education (summer quarter)	Co-op
Choose one of the following:		4
2061-354	Photomacrography	
2061-463	Photo and the Microscope	
2076-471	Nature Photography	
2076-478	Architectural Photography	
2076-572	Scanning Electron Microscopy	
Fourth Year		
2076-501	Introduction to Research	3
2076-503	Survey of Nonconventional Imaging	3
2076-511	High-Speed/Time Lapse	3
	General Education Electives	24
	Open Electives	12
Total Quarter Credit Hours		**190**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.
‡Calculus I and II may be substituted for College Algebra and Trigonometry, Calculus for Engineering Technology I, and/or Data Analysis.
§University Physics I, II, and III and the related labs can be substituted for College Physics.
Notes: Minors or concentrations in general education can be selected only from such offerings by the College of Science or the College of Liberal Arts. Minors offered by other colleges can be applied to open electives.

Cooperative education

At least two cooperative education placements, each normally 10 weeks in length, are required before graduation. Co-ops are full- or part-time positions. They offer an opportunity for students to gain experience in their field and are generally completed between their second and third academic years. The Office of Cooperative Education and Career Services can assist students in identifying co-op placements and opportunities.

Additional information

Career opportunities

An employment survey conducted by the School of Photographic Arts and Sciences indicates the need for graduates with imaging and photographic technology backgrounds will exist well into the future. Recent graduates are employed as applications engineers; imaging/photographic technologists; technical sales representatives; technical illustrators; high-speed photographers; corporate, industrial, advertising, and commercial photographers; and research associates in the private, government, and entrepreneurial sectors.

The Technical Photography Student Association promotes professional and social interaction among students and professionals from the imaging and photographic technology industry. The association regularly invites alumni in professional imaging fields to present lectures and demonstrations.

Professional Photographic Illustration–Advertising Photography, BFA

http://cias.rit.edu/photography

Douglas Manchee, Program Chair
(585) 475-7401, djmpph@rit.edu

Program overview

The advertising photography option prepares students to utilize their skill and creativity in the challenging world of commercial photography. Whether creating images for advertising agencies, magazines, or designer projects, students learn the technical and artistic skills necessary to create successful photographs. Graduates receive a bachelor of fine arts degree in professional photographic illustration.

The program is flexible enough to develop each student's particular talents, with the ultimate goal of providing art for commerce. During their junior and senior years, students can choose from courses that include editorial, food, portraiture, architectural, and still-life photography. Additional courses include advanced studio and location photography, publication design and production, and collaborative courses with graphic design students. All advertising photography courses emphasize visual communications and professional business practices.

Curriculum

Professional photographic illustration, advertising photography option, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2067-201, 202, 203	Photo Arts 1, 2, 3	15
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2076-211, 212, 213	Materials and Processes of Photography	9
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2067-xxx	Photo Arts Elements	15
2067-306, 307, 308	History and Aesthetics of Photography	9
2013-211	Drawing I	3
2013-231	2D Design I	3
2013-xxx	4D Design	3
2067-xxx	Career Seminar	1
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
2067-411, 412	Advertising Photography	10
	Advertising Core‡	5
	Minor or CIAS Electives§	18-20
	Business Elective	4
	Liberal Arts*	12
Fourth Year		
	Advertising Core‡	10
2067-473	Portfolio Development	5
	Minor or CIAS Electives**§	12-20
	Open Electives#	12-15
Total Quarter Credit Hours		**184**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Advertising core, minimum of 15 credits required
§ RIT-approved minor and/or CIAS elective, minimum 20 credits required

Professional Photographic Illustration– Fine Art Photography, BFA

Therese Mulligan, Chair
(585) 475-2884, mtmpph@rit.edu

Program overview

The fine art photography option is designed to encourage and facilitate a student's artistic development, sensitivity, and uniqueness as a visual artist. The department's objective is to provide each student with a rich potential for personal growth as well as a lifetime of interesting and challenging work in creative imaging and related fields. Students majoring in fine art photography receive the BFA degree in professional photographic illustration.

Curriculum

Professional photographic illustration, fine art photography option, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2067- 201, 202, 203	Photo Arts 1, 2, 3	15
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2076-211, 212, 213	Materials and Processes of Photography	9
	Liberal Arts*	12
1720-050, 0512	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2067-xxx	Photo Arts Elements	15
2067-306, 307, 308	History and Aesthetics of Photography	9
2013-211	Drawing I	3
2013-231	2D Design I	3
2013-xxx	4D Design	3
2067-xxx	Career Seminar	1
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
2067-406, 407, 408	Photography as a Fine Art I, II, III	12
2067-416, 417	Contemporary Issues	8
	Modern Art History Elective	3
	Art History/Critical Study/Open Elective	3-4
	Minor or CIAS Electives‡	6-9
	Liberal Arts*	12
Fourth Year		
2067-506, 507, 508	Photography as a Fine Art II	12
	Minor or CIAS Electives‡	18-22
	Open Electives	9-12
Total Quarter Credit Hours		**181**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ RIT-approved minor and/or CIAS elective, minimum 28 credits required.

Additional information

Career opportunities

Graduates of the program find careers as exhibiting artists, teachers, picture editors, art directors, photographers' representatives, photographic archivists, museum and gallery staff, multimedia specialists, self-employed photographers, custom-image printers, and film/video artists or animators. Many students choose to pursue graduate work and earn an MFA degree in the arts.

Professional Photographic Illustration– Photojournalism, BFA

William Snyder, Program Chair
(585) 475-2780, wdspph@rit.edu

Program overview

World events often are etched in the public's mind not by words but by photographs. The photojournalism option, which leads to a bachelor of fine arts degree in professional photographic illustration, provides an education in both photographic craft and visual storytelling. Since 1979, many graduates of this program have earned professional acclaim. Ten alumni have been awarded the Pulitzer Prize for photojournalism.

Within the program, students will have the opportunity to explore photography-related disciplines such as electronic publishing, video documentary, multimedia for photojournalists, and sound gathering and editing, to name a few.

Curriculum

Professional photographic illustration, photojournalism option, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2067-201, 202, 203	Photo Arts 1, 2, 3	15
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2076-211, 212, 213	Materials and Processes of Photography	9
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2067-xxx	Photo Arts Elements	15
2067-306, 307, 308	History and Aesthetics of Photography	9
2013-211	Drawing I	3
2013-231	2D Design I	3
2013-xxx	4D Design	3
2067-xxx	Career Seminar	1
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
2067-401, 402, 403	Photojournalism I, II, III	15
	Photojournalism Core‡	4-5
2067-xxx	Photojournalism Ethics	4
2067-xxx	Portfolio Development	5
	Minor or CIAS Electives§	8
	Liberal Arts*	12
Fourth Year		
2067-xxx	Photojournalism II	15
	Photojournalism Core‡	8-10
	Minor or CIAS Electives§	12
	Open Electives**	12-15
Total Quarter Credit Hours		**189**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Photojournalism core, minimum of 12 quarter credits required

Internships

Our students apply for internships with some of the nation's most respected newspapers and magazines. They work behind the camera on a variety of stories and have the opportunity to learn from photographers, editors, and other professionals in the newsroom. Students receive assistance from their professors, as well as from the Office of Cooperative Education and Career Services, in identifying and applying for internships. Internships provide real-world work experience, which is an invaluable part of our students' educational experience.

Additional information

National Press Photographers Association

Photojournalism students are the driving force in our National Press Photographers Associate (NPPA) student chapter, which was named the 2004 Chapter of the Year by the national association. Students regularly attend activities sponsored by the NPPA. The chapter hosts guest speakers and alumni who share their experiences in photojournalism and review student portfolios. Chapter members participate each year in NPPA short courses and publish their own website.

Career opportunities

Our photojournalism graduates go to work for some of today's best newspapers and magazines, working initially as either interns or full-time employees. A significant number of our students also become self-employed freelance photographers. They seek freelance assignments with news organizations, picture agencies, stock photo agencies, and editorial photographers.

Professional Photographic Illustration– Visual Media, BFA

Michael Peres, Associate Chair
(585) 475-2775, mrppph@rit.edu

Program overview

The computer has helped unite the industries of photography, graphic design, and print media. All three of these career fields are using the same tools for visual communication and production. As a result, employers search for graduates with a strong base in photography and the ability to work efficiently with graphic designers, print media specialists, and multimedia professionals.

The visual media option broadens a student's skill base to include graphic design and/or print media. Graduates work within these disciplines to coordinate, drive, and direct the production of visual projects.

Students choose a focus in either graphic design or print media. The flexibility of the electives and management courses allows for an even broader skill set in the field. Students will prepare for careers in photographic studio management, graphic design production management, and printing management industries.

Curriculum

Professional photographic illustration, visual media option, BFA degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2067-201, 202, 203	Photo Arts 1, 2, 3	15
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
2076-211, 212, 213	Materials and Processes of Photography	9
	Liberal Arts*	12
1720-050, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
2067-xxx	Photo Arts Elements	15
2060-301, 302, 303	History and Aesthetics of Photography	9
2013-211	Drawing I	3
2013-231	2D Design I	3
2013-xxx	4D Design	3
2060-xxx	Career Seminar	1
	Liberal Arts*	12
	Wellness Education†	0
Third Year		
	Visual Media Focus§ (graphic design or print media)	8-9
0681-200, 201, 203	Management Process I, II, III	12
	Minor or CIAS Electives**	12
	Liberal Arts*	12
Fourth Year		
2067-512	Visual Media Capstone Project	4
	Visual Media Focus or Elective§	4
	Minor or CIAS Electives**	10
	Photo Electives‡	16
	Open Electives††	12
Total Quarter Credit Hours		**184**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Photo electives, minimum of 16 quarter credits required in fine art photography, biomedical photographic communications, photographic arts and sciences and imaging and photographic technology
§ Visual media focus, minimum of 12 quarter credits required.
** Minor and/or CIAS elective, minimum 20 quarter credits required.
†† Open electives, minimum of 12 quarter credits required.

School of Print Media

The rapid innovation of digital technology has blurred the roles that traditionally differentiated printers, publishers, advertising agencies, graphic designers, website developers, and mail and fulfillment houses. Because of these evolving roles, the School of Print Media's program encourages customized study in other course areas to develop and enhance the individual talents and skills of our students.

The ability to tailor our programs differentiates RIT from other universities. Another primary differentiating factor is the school's facilities. Students have access to more than $40 million in state-of-the-art equipment in 17 laboratories.

Media Arts and Technology, BS

http://cias.rit.edu/printmedia/

Barbara Birkett, Program Chair
(585) 475-2889, babppr@rit.edu

Program overview

In the media arts and technology program students learn how to create, transform, and publish text and images. This might mean publishing to the Web, to a cell phone, to an iPod, or any other medium. This program reflects the convergence of technologies that enable content to be created, stored, and repurposed across multiple output media, as well as shared among millions of people, while simultaneously personalizing each message. Students build skills in traditional publishing, database management, and new media production in preparation for working closely with designers, photographers, marketers, IT professionals, and all of the players in the publishing process.

In their sophomore year, students begin a concentration comprised of four courses from one of the following seven areas: advertising and media strategy, contemporary publishing, content management, digital imaging and pre-media, print production, print quality, and three-dimensional computer graphics. The concentrations give students an opportunity to gain in-depth knowledge in an area of particular interest to them.

Graduates find challenging positions with advertising and marketing agencies, publishers, news organizations, print media firms, website developers, corporate communication departments, direct marketers, and a host of other firms across many industries.

Curriculum

Media arts and technology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
2083-201	New Media Perspectives	3
2083-206	Imaging for New Media	4
2083-216	Digital Foundations	4
2083-217	Typography and Page Design	4
	Liberal Arts*	16
1016-225	Algebra for Management Science	4
	Laboratory Science§	4
	General Education	4
1720-050, 052	First-Year Enrichment	2
Second Year		
2082-303	Professional and Technical Writing‡	4
2083-346	Print Production Workflow	4
	SPM Concentration	3-4
2082-417	Database Publishing	4
	Liberal Arts	4
1016-319, 320	Data Analysis I, II	10
	Laboratory Science§	4
	General Education	4
4002-206	Web Foundations	4
4002-406	Rapid Online Presence	4
	Liberal Arts*	4
	Wellness Education†	0
	Cooperative Education	Co-op
Third Year		

COURSE		QTR. CR. HRS.
2082-337	Digital Asset Management	3
2083-328	Information Architecture for Publishing Systems	4
2083-416	Media Business Basics	4
	Professional Elective	4
	SPM Concentration	9-12
	Liberal Arts*	12
	Open Elective	4
	General Education	8
	Cooperative Education	Co-op
Fourth Year		
2083-542	New Media Team Project	4
	General Education	16
	Professional Elective	4
	Open Elective	16
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Students must take the Writing Competency Test if they earn less than a grade of "B" in this class.
§ School of Print Media students are required to complete two approved laboratory science courses. The following courses meet this requirement: Biology (1004-211 and 1004-231; 1004-212 and 1004-232); Chemistry (1011-201 and 1011-205; 1011-202 and 1011-207; 1011-271 and 1011-205; 1011-273 and 1011-277; 1011-215 and 1011-205; 1011-216 and 1101-206); Physics (1017-211; 1017-212; 1017-202; 1017-311; 1017-312); Medical Science (1026-222); Astronomy (1017-230 and 1017-231; 1017-235 and 1017-236); Imaging Science (1051-215; 1051-217); Environmental Science (1006-202; 1006-203); or Environmental Geology (0630-370 and 0630-372). Students are responsible for checking course prerequisites.

Accelerated dual degree option

A joint program between the School of Print Media and the E. Philip Saunders College of Business, the accelerated BS/MBA dual degree option enables students to earn a BS degree and an MBA in five years. Students who qualify for this option receive a waiver of up to six MBA courses for specific undergraduate management courses completed with a grade of B or better.

Students interested in this dual degree should discuss the option's requirements with their advisers as early as possible during their undergraduate program. Students must meet the admission requirements for the MBA program, which include minimum Graduate Management Admission Test scores and undergraduate grade standards. Students must satisfy all of the requirements of their undergraduate degree and the MBA degree before each degree can be awarded.

Art and Design, Undeclared

Program overview

If students have a passion for the visual arts, but are undecided about which program of study to pursue, they may consider either the undeclared art and design or the undeclared crafts option in the College of Imaging Arts and Science. Students in the School of Art, School of Design, and the School for American Crafts begin their studies in a foundation studies program. This program provides students with a broad set of introductory experiences in several areas of the visual arts. Students interested in one of the programs in the School of Art or the School of Design should apply for the undeclared art and design option, while students interested in programs in the School for American Crafts should apply for the undeclared crafts option. Admission to these programs is based, in part, on a portfolio evaluation. Portfolio guidelines can be found at admissions.rit.edu.

Crafts, Undeclared

Program overview

If students have a passion for the visual arts, but are undecided about which program of study to pursue, they may consider either the undeclared art and design or the undeclared crafts option in the College of Imaging Arts and Science. Students in the School of Art, School of Design, and the School for American Crafts begin their studies in a foundation studies program. This program provides students with a broad set of introductory experiences in several areas of the visual arts. Students interested in one of the programs in the School of Art or the School of Design should apply for the undeclared art and design option, while students interested in programs in the School for American Crafts should apply for the undeclared crafts option. Admission to these programs is based, in part, on a portfolio evaluation. Portfolio guidelines can be found at admissions.rit.edu.

College of Imaging Arts and Sciences

Lorraine Justice, BFA, Edinboro University; MA, Ph.D., The Ohio State University—Dean

Twyla Cummings, BS, MS, Wright State University; Ph.D., Union Institute—Paul and Louise Miller Distinguished Professor; Interim Associate Dean; Professor

Debbie Kingsbury, BS, MS, Rochester Institute of Technology—Assistant Dean

School of Art

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

Bob Cole, BA, MS, University of Maryland—Professor

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

William Finewood, BA, State University College at Geneseo; MFA, Syracuse University—Associate Professor

Robert Heischman, BFA, Miami University; UCFA, Ruskin School of Art—Professor

Glen Hintz, BA, Lafayette College; MS, The Medical College of Georgia—Associate Professor

Keith Howard, Diploma, National Art School (Australia); MA, New York University—Associate Professor

Elizabeth Kronfield, BFA, Bowling Green State University; MFA, University of Georgia—Associate Professor

Thomas Lightfoot, BA, BFA, University of Connecticut; MFA, Instituto Allende (Mexico); MA, Ed.D., Columbia University Teachers College—Associate Professor

James Perkins, BA, Cornell University; MFA, Rochester Institute of Technology; ABD, University of Rochester—Associate Professor

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

Alan Singer, BFA, The Cooper Union; MFA, Cornell University—Professor

Zerbe Sodervick, BFA, University of Nebraska; MFA, Pratt Institute—Director of Extended Studies; Associate Professor

Carole Woodlock, BFA, Alberta College of Art (Canada); MFA, Concordia University—Coordinator, Visual Arts (All Grades); Associate Professor

Foundations

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

Roberley Ann Bell, BFA, University of Massachusetts at Amherst; MFA, State University of New York at Alfred—Professor

Eileen Bushnell, BFA, University of Massachusetts at Amherst; MFA, Indiana State University—Administrative Chair, Foundations; Associate Professor

Bob Cole, BA, MS, University of Maryland—Professor

Regina Ferrari, BFA, Wayne State University; MFA, Virginia Commonwealth University—Assistant Professor

Robert Heischman, BFA, Miami University; UCFA, Ruskin School of Art—Professor

Heidi Nickisher, BA, University of California at Santa Barbara; MA, California State University, Fullerton—Senior Lecturer

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

Clarence Burton Sheffield Jr., BS, University of Utah; MA, University of Colorado at Boulder; Ph.D., Bryn Mawr College—Associate Professor

Sarah Sutton, BA, John Carroll University; MFA, Kent State University—Visiting Assistant Professor

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

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

School of Design

Patti J. Lachance, BFA, Herron School of Art and Design, Indiana and Purdue Universities; MFA, Rochester Institute of Technology—Administrative Chair, School of Design; Associate Professor

Jason Arena, BS, University of Buffalo; MFA, Pratt Institute—Associate Professor

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

Peter Byrne, BFA, Alberta College of Art & Design (Canada); MFA, York University (Canada)—Associate Professor

Nancy A. Chwiecko, BA, St. Lawrence University; MFA, Rochester Institute of Technology—Associate Professor

Nancy A. Ciolek, BFA, MFA, Indiana State University—Associate Professor; Graphic Design Program Chair

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

Carol Fillip, BS, State University of New York at Buffalo; MFA, Rochester Institute of Technology—Assistant Professor

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

David Halbstein, BA, William Patterson College; MA, William Patterson University—Assistant Professor

Therese M. Hannigan, BFA, MS, Rochester Institute of Technology—Associate Professor

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

Chris B. Jackson, BFA, Alfred University; MFA, Rochester Institute of Technology—Coordinator, Graduate Graphic Design and Computer Graphics Design; Associate Professor

Charles F. Lewis, B.Arch., Pratt Institute; M.Arch., State University of New York at Buffalo—Interior Design Program Chair; Professor

Alex Lobos, BID, Universidad Rafael Landivar (Guatemala); MFA, University of Notre Dame—Assistant Professor

Bruce I. Meader, BFA, MFA, Carnegie Mellon University—Associate Professor

Marianne O'Loughlin, BA, St. Bonaventure University; BFA, MFA, Rochester Institute of Technology—Associate Professor

Josh Owen, BA, BFA, Cornell University; MFA, Rhode Island School of Design—Associate Professor

Alan Reddig, BID, Syracuse University—Senior Lecturer

R. Roger Remington, BFA, Rochester Institute of Technology; MS, University of Wisconsin—Professor

Stan Rickel, BID, Pratt Institute; MID, Syracuse University—Industrial Design Program Chair; Associate Professor

Marla Schweppe, BA, University of Kansas; MA, The Ohio State University—3D Digital Graphics Program Chair; Professor

Kim Sherman, BS, State University College at Cortland; MFA, Rochester Institute of Technology—Senior Lecturer

Adam Smith, BFA, MFA, Rochester Institute of Technology—New Media Design Program Chair; Associate Professor

School for American Crafts

Andy Buck, BA, Virginia Commonwealth University; MFA, Rhode Island School of Design—Professor

Juan Carlos Caballero-Perez, BFA, MFA, Rochester Institute of Technology—Professor

Robin Cass, BFA, Rhode Island School of Design; MFA, Alfred University—Professor

Wendell Castle, BFA, MFA, University of Kansas—Artist-in-Residence; Chair in Contemporary Crafts; Professor

Richard A. Hirsch, BS, State University College at New Paltz; MFA, Rochester Institute of Technology—Professor

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

Michael Rogers, BA, MA, Western Illinois University; MFA, University of Illinois—Professor

Richard Tannen, BS, Cornell University; Certificate, Boston University—Professor

Leonard A. Urso, BFA, MFA, State University College at New Paltz—Professor

School of Film and Animation

Cat Ashworth, BFA, Arizona State University; MFA, State University of New York at Buffalo—Associate Professor

Charles Bandla, BA, State University College at Fredonia; MFA, Rochester Institute of Technology—Visiting Assistant Professor

Carl Battaglia, BA, Boston College; MFA, Syracuse University—Professor

Jack Beck, BA, Denison University; MFA, University of Iowa—Live Action Production Program Chair; Associate Professor

Adrianne Carageorge, BA, Florida State University; MFA, Ohio University—Associate Professor

Bob Deaver, BS, University of California; MFA, Academy of Art University—Visiting Assistant Professor

Ricardo Figueroa, BS, MS, University of Puerto Rico, Mayaguez—Assistant Professor

Tom Gasek, BFA, Rochester Institute of Technology; MFA, Art Institute of Boston at Lesley University—Assistant Professor

Brian Larson, BFA, Colorado State University; MFA, Miami International University—Assistant Professor

Howard Lester, BA, Cornell University; MFA, University of California at Los Angeles—MFA Coordinator; Professor

David Long, BS, University of Texas; MS, University of Rochester—Digital Cinema Program Chair; Assistant Professor

Stephanie Maxwell, BA, University of California at Los Angeles; MFA, San Francisco Art Institute—Animation Program Chair; Professor

Mark Reisch, BFA, Savannah College of Art and Design; Certificate in Advanced Studies of Animation, Emeryville—Visiting Assistant Professor

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

Malcolm Spaull, BS, St. Lawrence University; MFA, Rochester Institute of Technology—Administrative Chair; Professor

School of Photographic Arts and Sciences

Patricia Ambrogi, BA, State University of New York at Albany; MFA, Visual Studies Workshop—Associate Professor

Owen Butler, BFA, Rochester Institute of Technology—Associate Professor

Frank Cost, BS, Eisenhower College; MS, Rochester Institute of Technology—Program Chair, Visual Media; Professor

Andrew Davidhazy, BFA, MFA, Rochester Institute of Technology—Professor

Meredith Davenport, BFA, Rochester Institute of Technology; MFA, Hunter College—Assistant Professor

Denis Defibaugh, BS, MS, Rochester Institute of Technology—Professor

Stephen Diehl, BS, University of Miami; BS, MS, Rochester Institute of Technology—Associate Professor

Rachel Ferraro, BFA, Rochester Institute of Technology—Lecturer

Angela Kelly, Diploma, Trent Polytechnic (U.K.); Diploma Ed., Mary Ward College (U.K.); MA, Columbia College—MFA Coordinator, Imaging Arts; Associate Professor

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

Dan Larkin, BFA, Rochester Institute of Technology; MFA, Bard College—Fine Art Photography Chair; Associate Professor

Doug Manchee, BA, MA, San Francisco State University—Program Chair, Advertising Photography; Associate Professor

Glenn Miller, BS, Rochester Institute of Technology—Associate Professor

Therese Mulligan, BA, University of Missouri; MA, Michigan State University; Ph.D., University of New Mexico—Administrative Chair, Photographic Arts; Professor

Willie Osterman, BFA, Ohio University; MFA, University of Oregon—Professor

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

Douglas Ford Rea, BS, Union College; MFA, Rochester Institute of Technology—Professor

Patricia Russotti, BS, Empire College; MS, Ed.S., Indiana University—Associate Professor

Nanette Salvaggio, BS, Rochester Institute of Technology—Lecturer

Nitin Sampat, BS, University of Bombay (India); MS, Rochester Institute of Technology—Minor Coordinator, Imaging Systems; Associate Professor

Christye Sisson, BS, MS, Rochester Institute of Technology—Biomedical Photographic Communications Chair; Associate Professor

William Snyder, BS, Rochester Institute of Technology—Photojournalism Chair; Professor

Loret Steinberg, BA, MFA, Indiana University at Bloomington—Associate Professor

Allen Vogel, Diploma, Philadelphia College of Art; MFA, Rochester Institute of Technology—Associate Professor

Ken White, BA, Princeton University; MA, MFA, University of New Mexico—Associate Professor

Thomas Zigon, BS, MS, Rochester Institute of Technology—Assistant Professor

School of Print Media

Patricia Sorce, BA, Kent University; MS, Ph.D., University of Massachusetts—Fawcett Distinguished Professor

Charles Bigelow, BA, Reed College; MFA, University of California at Los Angeles; Certificate of Advanced Studies, Harvard University—Melbert B. Cary Distinguished Professor

Barbara Birkett, BA, Aquinas College; MBA, University of Michigan; MBA, Rochester Institute of Technology; CPA, Maryland—Program Chair; Associate Professor

Robert Y. Chung, BA, Eastern Washington State University; MS, Rochester Institute of Technology—Gravure Research Professor

Robert Eller, AB, MA, University of Missouri—Visiting Professor

Franziska Frey, MS, University of Zurich (Switzerland); Ph.D., Swiss Federal Institute of Technology—Administrative Chair; McGhee Distinguished Professor

Christine Heusner, BA, Elmira College; MFA, Rochester Institute of Technology—Visiting Professor

Myrtle Jones, BA, University of Illinois; MA, New York University—Assistant Professor

David Pankow, BA, MA, Brooklyn College; MLS, Columbia University—Professor

Michael P. Riordan, BS, State University College at New Paltz; MS, Rochester Institute of Technology—Lecturer

Frank J. Romano, BA, City University of New York—Professor Emeritus

Scott Williams, BA, Purdue University, Ph.D., Montana State University—Graduate Program Coordinator; 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: Leonard Urso

Gannett Center for Integrated Publishing Sciences
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: Patricia Albanese

Artist-in-Residence Professorship
Established: 1984

Purpose: To work with apprentice woodworkers and participate in conferences and lectures at RIT.
Held by: Wendell Castle

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: Charles Bigelow

Gravure Research Professor
Established: 2004
Purpose: To promote gravure education in the curriculum.
Held by: Robert Chung

James E. McGhee Professorship in Photographic Management
Established: 1967
Donor: Master Photodealers and Finishers Association and friends of Mr. 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: Franziska Frey

Paul and Louise Miller Distinguished Professorship in Newspaper Operations Management
Established: 1979
Donor: Frank E. Gannett Newspaper Foundation
Purpose: To honor the former chairman of the board of the Gannett Company and perpetuate his interest in good management practices in the newspaper industry.
Held by: Twyla Cummings

Roger K. Fawcett Distinguished Professorship in Publications Color Management
Established: 1991
Donor: World Color Press, Fawcett family, and industry colleagues
Purpose: The endowed chair, the only one of its kind in the nation, was established to address color quality and productivity in both the magazine and the newspaper publishing industries as well as promotion of RIT color research activities.
Held by: Patricia Sorce

College of Liberal Arts

James J. Winebrake, Dean
www.rit.edu/cla/

Programs of study

Bachelor of science degrees in:

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.

The college offers undergraduate degree programs in advertising and public relations, criminal justice, economics, international studies, journalism, museum studies, philosophy, political science, professional and technical communication, psychology, public policy, and urban and community studies. The Liberal Arts Exploration option is a two-year undeclared program for students who are undecided about their choice of liberal arts major.

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 modern world. As a result, the Liberal Arts general education requirements for undergraduate students include introductory and upper-level courses in the humanities and the social and behavioral sciences.

The Liberal Arts general education curriculum seeks to help students develop specific kinds of knowledge, such as:
- understanding the connections among humanistic, professional, and technological studies;
- building critical awareness of the interactions among society, culture, science, and technology;
- understanding and appreciating diverse social and cultural perspectives;
- understanding local, national, and global forms of citizenship and community;
- establishing knowledge and critical understanding of the responsibilities and rights of living in a participatory democracy;
- understanding human development and behavior;
- broadening critical awareness of the interactions between society and the environment;
- creating, interpreting, and evaluating artistic expression and understanding the aesthetic dimension of other forms of expression and experience;

- understanding the nature and implications of work and career;
- reasoning critically and creatively;
- reasoning through ethical and values issues and relating that reasoning to one's judgments and practice;
- understanding and demonstrating proficiency in written, oral, visual, and nonverbal forms of communication; and
- demonstrating proficiency in the analysis and interpretation of quantitative and qualitative data.

Admission requirements

For more information on undergraduate admission, including freshman and transfer admission guidelines, please refer to 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.

Faculty

College of Liberal Arts faculty members are recruited from the top graduate schools, and nearly all have doctorate or other terminal degrees. They are dedicated to providing students with outstanding educational experiences and access to cutting-edge research.

Cooperative education/Internships

Students in the College of Liberal Arts have the option of participating in cooperative education or internship opportunities that provide hands-on experience as well as the opportunity to further develop their skills in a chosen profession.

Advising

Liberal arts academic advising: Upon entry into the College of Liberal Arts, each student is assigned an academic adviser. These faculty members help students formulate career goals and offer support with registration, scheduling, and cooperative education.

Liberal arts general education advising: The advising staff in the college's Office of Student Services offers support to all RIT students as they select liberal arts courses to fulfill the required general education curriculum for their degree programs. The advising staff provides guidance that is consistent with the general education policies of the university. The office also evaluates liberal arts courses as transfer credits for all RIT students.

Academic enrichment

Honors Program: Students who demonstrate a high level of achievement at the high school level may be invited to join the Honors program. These students will participate in Honors course work throughout their program of study and experiential learning activities under the guidance of a faculty mentor. Honors students will be selected during the admissions process.

Study Abroad: RIT encourages all students to consider a study abroad program. Students may study full time at a variety of host schools and are able to select courses that fulfill requirements in their academic field of study and/or RIT liberal arts general education requirements. RIT's Study Abroad Office has information about foreign study options and opportunities.

Minors: RIT offers students more than 95 minors to choose from to enhance their academic program or further develop a personal area of interest. For a detailed list of minors, including courses, please refer to the Minors section of this bulletin.

Research: Students have the opportunity to collaborate with faculty members on exciting applied research projects. Students are encouraged to work with faculty on projects and to present their findings at the college's annual Student Research Conference, which highlights students' research findings. The college also hosts the annual Conference for Undergraduate Research in Communication. This conference invites students from all over the Northeast to showcase their research pursuits with peers from other institutions.

Professional student organizations: The college maintains memberships in the following professional organizations: American Advertising Federation, Lambda Pi Eta (National Honor Society for Communication), Omicron Delta Epsilon (International Honor Society for Economics) and the Public Relations Student Society of America.

Special opportunities

Accelerated dual degree option: Some programs offer accelerated, five-year dual BS/MS or BS/MBA degree options. These degrees offer students the opportunity to earn a bachelor's degree and a master's degree in less time than pursuing each degree individually. Please refer to individual programs, the *Graduate Bulletin,* or the college's website for more information.

Double majors: The college offers a number of double majors to assist students in obtaining two areas of expertise. Please refer to individual programs or the college's website for more information.

Graduate study: The college offers the following graduate degree programs: applied experimental and engineering psychology; communication and media technologies; criminal justice; science, technology, and society; and school psychology. Please refer to the *Graduate Bulletin* or the college's website for more information.

Part-time, evening and online options: Many of the college's programs may be completed on a part-time basis. Please refer to the Office of Part-time and Graduate Enrollment's or the college's website for more information.

Summer course offerings: The college offers a number of summer courses in English, foreign languages, science and humanities, and social sciences as well as degree program courses in the college's academic areas of study. Please contact the Liberal Arts Office of Student Services, the Office of Part-time Enrollment Services, or visit the college's website for more information.

Advertising and Public Relations, BS

http://www.rit.edu/apr

Patrick Scanlon, Department Chairperson
(585) 475-2879, pmsgsl@rit.edu

Program overview

The bachelor of science degree in advertising and public relations prepares students to create persuasive messages for a variety of media. Students learn to analyze audiences, write copy, select media, and manage campaigns. Upon graduation, many students find work in the commercial, education, entertainment, government, or nonprofit sectors.

The fields of advertising and public relations are rapidly changing now that the Internet has added global reach, interactivity, and convergence to traditional media. Professionals will face unique opportunities as well as exciting challenges. No one is better prepared to succeed than graduates from our program, which is one of the few in the country to combine advertising, public relations, and marketing to address the overlapping roles of communication professionals. The program was formed through a partnership between the college's department of communication and the department of marketing in the E. Philip Saunders College of Business. Our program is distinguished by a senior thesis requirement and 20 weeks of work experience gained through internships and/or cooperative education.

Curriculum

Required communication courses (64 quarter credit hours)

0535-200	Foundations of Communication
0535-315	Quantitative Research Methods
0535-316	Qualitative Research Methods
0535-421	Public Relations
0535-445	Theories of Communication
0535-450	Visual Communication
0535-460	Copywriting and Visualization
0535-461	Principles of Advertising
0535-462	Digital Design in Communication
0535-463	Campaign Management and Planning
0535-464	Public Relations Writing
0535-467	Media Planning
0535-481	Persuasion
0535-482	Mass Communications
0535-501	Public Speaking
0535-595	Senior Thesis in Communication

University-wide electives (24 quarter credit hours)
Six courses (chosen as electives)

Professional core (16 quarter credit hours)
As part of the program's degree requirements, students take a professional core of four courses from the department of marketing in the E. Philip Saunders College of Business.

Required course:

0105-363	Principles of Marketing

Electives–Choose any three of the following:

0105-440	Internet Marketing
0105-445	Business to Business e-Commerce
0105-505	Buyer Behavior
0105-554	Seminar in Marketing
0105-559	Professional Selling
0105-560	Advertising and Promotion Management
0113-450	Marketing in the Global Environment

Advertising and public relations, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0535-200	Foundations of Communication	4
0535-421	Public Relations	4
0535-501	Public Speaking	4
0535-462	Digital Design in Communications	4
4002-206	Web Foundations	4
	Liberal Arts*	8
	Mathematics and Science Requirements†	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education‡	0
Second Year		
0535-481	Persuasion	4
0535-461	Principles of Advertising	4
0535-450	Visual Communication	4
0535-482	Mass Communications	4
0535-467	Media Planning	4
	Professional Core	12
	Liberal Arts*	16
	Wellness Education‡	0
Third Year		
0535-445	Theories of Communication	4
0535-463	Campaign Management and Planning	4
	Professional Core	4
	General Education Electives	8
	Liberal Arts*	8
	Mathematics Requirement†	4
	University-wide Electives	8
	Cooperative Education (two quarters)	Co-op
Fourth Year		
0535-315	Quantitative Research Methods	4
0535-316	Qualitative Research Methods	4
0535-464	Public Relations Writing	4
0535-460	Copywriting and Visualization	4
0535-595	Senior Thesis in Communication	4
	Liberal Arts*	12
	University-wide Electives	16
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Mathematics and Science General Education Curriculum for more information.
‡ Please see Wellness Education Requirement for more information.

Senior thesis

As part of the program, students conduct original research on a subject of their choosing. Two faculty members advise students on how to investigate their topic, select a research method, implement the project, and present their results. Department of communication students often present their research at conferences.

Cooperative education

Students are required to complete two quarters of cooperative education or an internship experience in a professional position. This experience gives students the opportunity to apply their classroom learning to a professional work environment. There are many opportunities to choose from, including positions with advertis-

ing agencies and public relations firms as well as businesses and nonprofit organizations. The Office of Cooperative Education and Career Services can assist students in identifying co-op and internship positions as well as permanent placement upon graduation.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Advisers

Every student is assigned a faculty adviser, who is available for both academic advising and career counseling. Students find that frequent consultation with their adviser is helpful in planning course scheduling, co-ops, and post-graduation work. In addition to their faculty adviser, students are assigned a co-op and placement adviser, who is located in the Office of Cooperative Education and Career Services. Finally, peer mentors—other advertising and public relations students—are available to answer questions about classes, clubs on campus, student-run activities, and other matters from the student's perspective.

Faculty

Nearly all of the department's 18 faculty members hold the highest degrees in their fields. Many have won awards for teaching, and all have been published within their areas of expertise.

Careers

Upon graduation, students will be well-qualified for positions in business, government, and the not-for-profit sectors. Graduate work also is an option. The department of communication offers an MS degree in communication and media technologies. Visit the program website (www.rit.edu/cmt) or refer to RIT's *Graduate Bulletin* for more information.

Accelerated dual degree option

An accelerated dual degree option is available through an agreement with the E. Philip Saunders College of Business. The option allows students to earn a BS in advertising and public relations and an MBA in five years. For further information about this accelerated dual degree option, contact an adviser.

Criminal Justice, BS

http://www.rit.edu/cla/criminaljustice

LaVerne McQuiller Williams, Department Chairperson
(585) 475-2935, llmgcj@rit.edu

Program overview

The bachelor of science degree in criminal justice offers students a broad education, preparing them for a wide range of careers in criminal justice. The program 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 program is unique in its broad core curriculum, the scope of professional course offerings, and an intensive field experience, where students blend knowledge gained in the classroom with a career-oriented internship.

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.

The Center for Public Safety Initiatives is housed in the criminal justice department. The organization works with the Rochester Police Department and other community groups. Several students work at the 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. For additional information please see www.rit.edu/cpsi.

The criminal justice department also offers a master of science degree that focuses on program analysis and evaluation. Please see the *Graduate Bulletin* for more information.

Curriculum

Criminal justice, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0501-400	Criminology	4
0501-201	Seminar in Criminal Justice	4
	Liberal Arts*	12
0501-406	Technology in Criminal Justice	4
0501-456	Courts	4
0501-441	Corrections	4
0501-443	Law Enforcement in Society	4
	Mathematics and Science Requirement‡	8
0501-460	Current Issues in Criminal Justice	2
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
0501-440	Juvenile Justice	4
	Criminal Justice Electives	8
0501-444	Concepts in Criminal Law	4
	University-wide Electives	8
	Liberal Arts*	12
	Mathematics and Science Requirement‡	12
0501-460	Current Issues in Criminal Justice	2
	Wellness Education†	0
	Cooperative Education (optional)	Co-op
Third Year		
0501-528	Theories of Crime and Criminality	4
0501-410	Management in Criminal Justice	4
0501-401, 541	Research Methods I, II	8
	Criminal Justice Elective	4
	University-wide Electives	12
	Liberal Arts*	12
	Cooperative Education (optional)	Co-op
Fourth Year		
0501-403	Field Experience	8
0501-510	Interviewing and Counseling in Criminal Justice	4
	Criminal Justice Electives	8
	University-wide Electives	12

COURSE		QTR. CR. HRS.
0501-526	Seminar in Criminal Justice and Public Policy	4
	Liberal Arts*	8
Total Quarter Credit Hours		**186**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science Requirements for more information.

Field experience

During their senior year, students have the opportunity to choose an internship from 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 quarter (10 weeks), students work 25 hours a week under an agency field supervisor and meet regularly with an adviser and with peers who are doing field placements in other agencies. Placements are individualized to fit a student's career objectives.

Cooperative education

Students may have the opportunity to participate in cooperative education as part of their undergraduate program. In general, they may apply for co-op employment after three quarters of full-time study in the criminal justice program. Cooperative education provides a working experience in a criminal justice-related field but does not carry academic credit hours.

Additional information

Career planning

Upon acceptance into the criminal justice program, each student is assigned a faculty adviser who assists in formulating career goals and planning a field of study in accordance with those goals.

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.

Career opportunities

Alumni have entered a variety of careers in the criminal justice system directly following graduation or after completing graduate studies. Many graduates are engaged in law enforcement careers in agencies at all levels of government. At the state and federal levels, graduates are pursuing careers in agencies such as the Federal Bureau of Investigation, the Secret Service, the U.S. Marshals Service, Naval Intelligence Service, U.S. Customs and Border Patrol, the Immigration and Naturalization Service, the Centers for Disease Control, the Department of the Interior, and the National Park Service, among others. The Rochester Police Department, the Monroe County Sheriff's Department, and suburban departments throughout the Rochester area employ a substantial number of 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; many advance 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. We have many graduates serving 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 program, 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.

Prelaw study

The criminal justice curriculum prepares students for law school by combining a broad liberal arts background with intensive study in criminal justice. Students work closely with a faculty adviser to select appropriate professional and liberal arts electives. During their senior year, prelaw students spend 10 weeks (25 hours a week) as interns working with attorneys in the office of the district attorney, public defender, or state attorney general; with private law firms; or in any number of public or private organizations dealing with litigation. RIT's Prelaw Association publishes student research papers each year in *Legal Research at RIT.*

Honors program

Students with a 3.0 grade point average at the end of their junior year may apply for admission to the departmental Honors program. The program requires students to complete Honors Research, which involves original research or problem solving under the direction of a faculty member. The program provides excellent experience and evidence of independent work for potential employers or graduate and law schools.

Faculty

The eight full-time faculty members in the criminal justice program hold advanced degrees, have had professional experience in criminal justice, have proven teaching ability, and are committed to continuing professional growth in their areas of expertise. They spend many nonteaching hours in their offices with an open-door policy, in order to assist students with academic or personal concerns and questions. The full-time faculty members are supplemented by a strong cadre of adjunct instructors, many of whom are leading criminal justice practitioners in the region.

Economics, BS

http://www.rit.edu/cla/economics

Michael J. Vernarelli, Department Chairperson
(585) 475-2455, mjvgss@rit.edu

Program overview

The BS in economics emphasizes the quantitative analytical approach to dealing with economic problems in both the public and private sectors, providing students with marketable skills and the intellectual foundation for career growth. Graduates with a BS degree in economics are prepared for entry-level positions in management and quantitative analysis or to pursue graduate study in economics, business, or law.

Curriculum

The economics curriculum prepares students by developing communication, computer, and management skills in addition to

economic reasoning and quantitative abilities. Students in the program are involved in a wide variety of management and analytical positions, both during co-op and after graduation.

The program's required courses are specifically designed to develop the ability to apply economic analysis to real-world problems. Liberal arts courses enhance the student's 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 students to pursue advanced study in their 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 advisers help students develop professional options that will assist them in attaining their career goals.

Cooperative education
Students in the program who participate in co-op may be placed with financial and brokerage institutions, government offices, and large corporations. Co-op can be completed during any quarter, including summer, after the sophomore year.

Economics, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0511-200	Foundational Seminar in Economics	1
0511-211	Principles of Microeconomics	4
0511-402	Principles of Macroeconomics	4
0511-459	Managerial Economics	4
	Calculus Requirement‡	12
	Computer Science/Information Technology/ Management Information Systems Elective	4
	Liberal Arts*	16
1720-050, 052	Discovery and Pathways	2
	Wellness Education†	0
Second Year		
0511-452	Monetary Analysis and Policy	4
0511-457	Applied Econometrics	4
0511-458	Economic Forecasting	4
1016-319	Data Analysis	4
0101-301	Financial Accounting	4
Choose one of the following:		4
0101-302	Management Accounting	
0511-464	Game Theory: Economic Applications	
	Liberal Arts*	8
	General Education Electives	12
	Laboratory Science	8
	Wellness Education†	0
Third Year		
0511-453	Intermediate Microeconomic Theory	4
0511-455	Intermediate Macroeconomic Theory	4
0511-460	Mathematical Methods for Economics	4
0104-441	Corporate Finance	4
	Free Electives	8
	Computer Science/Information Technology/ Management Information Systems Electives	8
	Liberal Arts*	12
Fourth Year		
0511-454	International Trade and Finance	4
0511-456	Industrial Organization	4
0511-450	Benefit Cost Analysis	4

COURSE	QTR. CR. HRS.
Free Electives	19
General Education Electives	8
Total Quarter Credit Hours	**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Economics majors are required to take three pre-calculus and calculus courses and complete the equivalent of Calculus B.

Capstone experience
All economics majors are required to complete a creative, capstone experience which may be fulfilled in one of the following ways. Students may publish a paper in a refereed journal, present a paper at a professional conference, present a paper at an RIT-sponsored conference, present research at an approved exhibit at ImagineRIT, or fulfill a comparable creative capstone requirement in the student's primary major if economics is the secondary major.

Additional information

Double major in economics
Because of the flexibility of the economics curriculum, many students choose to pursue a double major in economics and a secondary field of study. Students are able to graduate in four years.

Accelerated dual degree options
In cooperation with the E. Philip Saunders College of Business, students may choose to pursue an accelerated BS/MBA option that permits qualified students to obtain a BS degree in four years and an MBA degree after one additional year of study. In cooperation with the public policy program, qualified students obtain a BS degree in economics and the MS degree in science, technology, and public policy in approximately five years of study. Students are encouraged to speak with an adviser to discuss courses and planning for this option.

Academic enrichment
Economics faculty members serve as mentors and are available to enhance students' personal and professional growth. There are many special opportunities for students in the economics program. They may work as teaching assistants for professors in Principles of Economics courses or learn about research techniques as research assistants for the faculty. For both of these activities, students receive a stipend. Finally, students can engage in independent research, receiving academic credit and obtaining funding for their research needs.

International Studies, BS

http://www.rit.edu/cla/sociology/internationalstudies

Christine Kray, Department Chairperson
(585) 475-4686, cakgss@rit.edu

Program overview

The bachelor of science in international studies highlights interdisciplinary approaches for understanding global processes, such as the impact of globalization on local communities, regions, and environments and how people in different parts of the world can promote equitable and sustainable development in the future. The program seeks to educate a new generation of global citizens who will acquire the expertise to assess and analyze salient issues such

as flexible capitalism, consumer culture, economic opportunities, international migration, social change, political violence, and terrorism. The program prepares graduates for careers that demand an understanding of the social, economic, political, and environmental issues that are central to globalization.

Curriculum

The program allows students to choose a specialization that is focused on either a world region or a function. The world regions are East Asia, Latin America, Europe, the Middle East, Africa, and Indigenous Studies. The two functional tracks are international business; and science, technology, and society.

It is expected that students with a regional specialization will study a language that corresponds to that region: for example, Chinese or Japanese in the East Asia track; Portuguese or Spanish in the Latin America track; or French, German, Portuguese, Russian, Italian, or Spanish in the Europe track.

International experience

The program requires students to participate in an international experience, which includes approved study abroad programs, cooperative education or internships in foreign countries, or employment in an international organization or in the international division of U.S. firms with foreign operations.

Career opportunities

Graduates are prepared for a range of careers in the private, government, and nonprofit sectors. There is increased demand by companies with foreign operations for graduates who are competent to interact with people from different cultures and societies, are cognizant of the international dimensions of business, are knowledgeable of different histories and current dimensions of globalization, and are able to communicate in the languages commonly spoken in different parts of the world. In addition, the international studies program prepares students for graduate study in public and international affairs, business, law, and the social sciences.

International studies, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Liberal Arts*	12
	Mathematics and Science Requirement‡	8
	Foreign Language Requirement	12
0524-210	Global Studies	4
0513-214	Introduction to International Relations	4
0507-441	Modern U.S. Foreign Relations	4
0510-440	Cultures in Globalization	4
1720-050, 052	Discovery and Pathways,	2
	Wellness Education†	0
Second Year		
Choose one of the following courses:		4
0511-449	Comparative Economic Systems	
0511-454	International Trade and Finance	
	Liberal Arts*	12
	Globalization Core Elective	4
1016-319, 320	Data Analysis I and II	10
	Foreign Language Requirement	12
4002-206	Web Foundations	4
	Wellness Education†	0

COURSE		QTR. CR. HRS.
Third Year		
	International Studies Track	8
	Foreign Language Requirement	12
0515-406	Qualitative Methods	4
	Liberal Arts*	12
	Mathematics and Science Requirement‡	4
	Open Electives	8
	International Experience	0
Fourth Year		
	International Studies Track	8
0524-501	Capstone Seminar	4
	Liberal Arts*	16
	Open Electives	12
Total Quarter Credit Hours		**182-184**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science General Education Curriculum.

Accelerated dual degree options

In cooperation with the E. Philip Saunders College of Business, students may choose to pursue an accelerated BS/MBA option that permits qualified students to obtain a BS degree in four years and an MBA degree after one additional year of study. In cooperation with the public policy program, qualified students obtain a BS degree in international studies and an MS degree in science, technology, and public policy in approximately five years of study. Students are encouraged to speak with an adviser to discuss courses and planning for these options.

Journalism, BS

http://www.rit.edu/journalism

Patrick Scanlon, Department Chairperson
(585) 475-2879, pmsgsl@rit.edu

Program overview

The bachelor of science degree in journalism offers a unique and multifaceted educational experience that prepares students to gather, critically analyze, and synthesize verbal and visual information in order to communicate accurate and clear news stories across multiple media platforms. In addition to writing and reporting, students learn to prepare audio and visual content for dissemination in a variety of media, making them a valuable asset to any future employer specializing in news reporting and factual storytelling.

The program 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 program prepares students for a converged digital media world. They will 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 offered through the College of Imaging Arts and Sciences.

Curriculum

Professional core courses

The professional core consists of six courses from the School of Print Media, the School of Film and Animation, and the department of photographic arts. The professional core provides an in-depth understanding of design principles, still photography, audio and video production, news and information management, and methods of new media publishing.

Senior project

This capstone course provides students an opportunity to integrate, synthesize, and apply prior learning to a project similar to one they would encounter in their profession. Students produce a long-form piece of journalism, a website, and a digital portfolio of select works.

Required communication courses (60 credit hours)

0535-201	Introduction to Journalism
0535-405	Information Gathering
0535-416	Newswriting
0535-417	Newswriting II
0535-445	Theories of Communication
0535-462	Digital Design
0535-464	Public Relations Writing
0535-470	Law and Ethics of the Press
0535-471	History of Journalism
0535-472	News Editing
0535-473	eJournalism
0535-474	Reporting in Specialized Fields
0535-476	eJournalism II
0535-482	Mass Communications
0535-590	Senior Project

University-wide electives (20 credit hours)

Five courses (chosen as electives)

Journalism elective (4 credit hours)

Professional core courses (21-23 credit hours)

The program's professional core consists of six courses, three required courses plus the student's choice of three additional courses.

Required courses:

2067-264	Intro Photo/Non-Photo
2065-222	Film Language
2065-357	History and Aesthetics of the Moving Image: Documentary

Choose one of the following:

2065-217	Digital Video for Multimedia
2065-243	Introduction to Portable Video I

Choose two of the following:

2083-317	News Production Management
2083-412	Digital News System Management
2082-371	Principles of Printing
2082-337	Digital Asset Management

Journalism, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0535-201	Introduction to Journalism	4
0535-482	Mass Communications	4
0535-471	History of Journalism	4
0535-416	Newswriting	4
4002-206	Web Foundations	4
	Liberal Arts*	12
	Mathematics and Science Requirement‡	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
0535-405	Information Gathering	4
0535-417	Newswriting II	4
0535-462	Digital Design in Communication	4
0535-474	Reporting in Specialized Fields	4
0535-472	News Editing	4
0535-445	Theories of Communication	4
0535-473	eJournalism	4
	General Education Elective	4
	Liberal Arts*	8
	Professional Core	6-8
	Wellness Education†	0
Third Year		
0535-476	eJournalism II	4
0535-470	Law and Ethics of the Press	4
	Professional Core	6-8
	Liberal Arts*	12
	General Education Electives	8
	University-wide Electives	8
	Mathematics Requirement‡	4
	Cooperative Education (two quarters)	Co-op
Fourth Year		
0535-464	Public Relations Writing	4
	Journalism Elective	4
0535-590	Senior Project	4
	Professional Core	6-8
	Liberal Arts*	4
	General Education Electives	8
	University-wide Electives	12
Total Quarter Credit Hours		**187-189**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science General Education Curriculum for more information.

Cooperative education

Students are required to complete two quarters of cooperative education or an internship experience in a professional position. This experience gives students the opportunity to apply their classroom learning to a professional work environment. Past co-op positions have included placements at newspapers, including the *Democrat and Chronicle*, Rochester's daily newspaper. The Office of Cooperative Education and Career Services can assist students in identifying co-op and internship positions as well as permanent placement upon graduation.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Advisers

Every student is assigned a faculty adviser, who is available for both academic advising and career counseling. Students find that frequent consultation with their adviser is helpful in planning course scheduling, co-ops, and post-graduation work. In addition to their faculty adviser, students are assigned a co-op and placement adviser, who is located in the Office of Cooperative Education and Career Services. Finally, peer mentors—other journalism students—are available to answer questions about classes, clubs on campus, student-run activities, and other matters from the student's perspective.

Faculty

Nearly all 18 faculty members in the department of communication hold the highest degrees in their fields. Many have won awards for teaching, and all have been published within their areas of expertise.

Careers

Journalism majors have a wide range of career options to choose from. It is expected that the market for writers and editors will increase by nearly 20 percent in the next few years, and graduates with experience in new media technologies will have a significant edge. The program also is ideal for those who wish to pursue graduate study in journalism or communication. The department of communication offers an MS degree in communication and media technologies. Please consult RIT's *Graduate Bulletin* for more information.

Museum Studies, BS

http://www.rit.edu/cla/crs

Tina Olsin Lent, Department Chairperson
(585) 475-2460, tnlgsh@rit.edu

Program overview

The bachelor of science degree in museum studies is an innovative, interdisciplinary, technically-based program that prepares students for careers in museums, archives, photo collections, and libraries.

Curriculum

The program includes a set of introductory and advanced core courses to familiarize students with the fundamentals of museum studies, including the history, theory, and practice of institutional collecting, conservation, and the technical investigation of art. To broaden and deepen their knowledge, students will also choose to pursue one of two specialized professional tracks: museum and information studies or art conservation.

Internship

The program requires students to complete a 200-hour internship in a cultural institution. This experience gives students the opportunity to apply what they've learned in the classroom to a professional setting and gain valuable work experience before they graduate.

Professional tracks

Both professional tracks (museum and information studies or art conservation) include course work that meets the criteria established by professionals in the field and reflects current opinion about necessary skill sets. Since 2000, the International Council of Museums (ICOM) and the Committee on Museum Professional Training (COMPT) have called for revisions in the training of museum professionals that reflect evolving needs for management, leadership, information technology, fundraising, and grant writing skills—all of which the cultural resource and information studies track includes. The art conservation track features the traditional criteria for entry into the field as well as course work in chemistry and studio arts, two areas that have been identified as deficient in other undergraduate programs.

Museum and Information Studies Track

Program core

0533-370	Introduction to Museums and Collecting
0533-423	Art Materials: Photography
0533-422	Art Materials: Panel Painting
0533-438	Conservation of Cultural Materials
0533-424	Legal and Ethical Issues for Collecting Institutions
0533-425	Display and Exhibition Design
0533-426	Collections Management and Museum Administration
0533-427	Fundraising, Grant Writing, and Marketing for Nonprofit Institutions
0533-437	Forensic Investigation of Art and Research Methods
0533-510	Senior Thesis in Cultural Resource Studies

Art history and studio arts

2039-225, 226, 227	Survey of Western Art and Architecture I, II, III
Freshman-level studio (select two courses):	
2042-215	Freshman Metals and Jewelry
2044-215	Freshman Wood and Woodworking
2040-215	Freshman Ceramics
2041-215	Freshman Glass and Glass Sculpture
2021-251	FTDN: Fine Arts Studio
2067-264	Introduction to Photography for Non-majors

Business core

0101-301	Financial Accounting
0102-430	Organizational Behavior
0105-363	Principles of Marketing

Management information systems

0112-325	Applying Business Technology
0112-331	Business Application Development
0112-340	Database Management Systems
0112-370	Systems Analysis and Design
0112-390	Emerging Business Technologies

General education electives

Institute free electives

Museum studies, BS degree, typical course sequence, museum and information studies track

COURSE		QTR. CR. HRS.
First Year		
0533-370	Introduction to Museums and Collection	4
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
	Freshman Studio	2

COURSE		QTR. CR. HRS.
2067-264	Introduction to Photography	4
	Liberal Arts*	12
	Mathematics and Science Requirements‡	13
1105-051, 052	First-Year Enrichment	2
Second Year		
0533-423	Art Materials: Photography	4
0533-422	Art Materials: Panel Painting	4
	Freshman Studio	2
	Liberal Arts*	24
	Mathematics and Science Requirements‡	8
	General Education Electives	8
	Wellness Education†	0
Third Year		
0533-425	Display and Exhibition Design	4
0533-426	Collections Management and Museum Administration	4
0533-427	Fundraising, Grant Writing, and Marketing for Nonprofit Institutions	4
	Business Core	12
	Management Information Systems	12
	Institute Free Elective	12
Fourth Year		
0533-438	Conservation of Cultural Materials	4
0533-424	Legal and Ethical Issues for Collecting Institutions	4
0533-437	Forensic Investigation of Art and Research Methods	4
0533-510	Senior Thesis	4
	Management Information Systems	8
	General Education Electives	12
	Institute Free Elective	4
Total Quarter Credit Hours		**184**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science Requirements for more information.

Art Conservation Track

Program Core

0533-370	Introduction to Museums and Collecting
0533-423	Art Materials: Photography
0533-422	Art Materials: Panel Painting
0533-438	Conservation of Cultural Materials
0533-424	Legal and Ethical Issues for Collecting Institutions
0533-437	Forensic Investigation of Art and Research Methods
0533-510	Senior Thesis in Cultural Resource Studies

Art history and studio arts

2039-225, 226, 227	Survey of Western Art and Architecture I, II, III
Freshman-level studio (select two courses):	
2042-215	Freshman Metals and Jewelry
2044-215	Freshman Wood and Woodworking
2040-215	Freshman Ceramics
2041-215	Freshman Glass and Glass Sculpture
2021-251	FTDN: Fine Arts Studio
2067-264	Introduction to Photography for Non-majors
2012-211, 212, 213	Drawing I, II, III
Sophomore-level studio (select one sequence):	
2042-301, 302, 303	Sophomore Metals Studio I, II, III
2044-301, 302, 303	Sophomore Wood and Woodworking I, II, III
2040-301, 302, 303	Sophomore Ceramics Studio I, II, III
2041-301, 302, 303	Sophomore Glass Studio I, II, III
2021-305, 315, 361	Painting, Printmaking, Sculpture

Mathematics and science

1013-231, 232, 233	Organic Chemistry I, II, III and Labs

General education electives

Institute free electives

Museum studies, BS degree, typical course sequence, art conservation track

COURSE		QTR. CR. HRS.
First Year		
0533-370	Introduction to Museums and Collection	4
2039-225, 226, 227	Survey of Western Art and Architecture I, II, III	9
	Freshman Studio	2
2067-264	Introduction to Photography	4
	Liberal Arts*	12
	Mathematics and Science Requirements‡	13
1105-051, 052	First-Year Enrichment	2
Second Year		
0533-423	Art Materials: Photography	4
0533-422	Art Materials: Panel Painting	4
	Freshman Studio	2
1013-231, 232, 233	Organic Chemistry I, II, III	12
	Liberal Arts*	16
	Mathematics and Science Requirements‡	4
	General Education Electives	8
	Wellness Education†	0
Third Year		
2013-211, 212, 213	Drawing I, II, III	9
	Liberal Arts	8
	General Education Electives	8
	Institute Free Elective	17
Fourth Year		
0533-438	Conservation of Cultural Materials	4
0533-424	Legal and Ethical Issues for Collecting Institutions	4
0533-437	Forensic Investigation of Art and Research Methods	4
0533-510	Senior Thesis	4
	Sophomore-Level Studio	18
	General Education Electives	8
	Institute Free Elective	5
Total Quarter Credit Hours		**185**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science Requirements for more information.

Additional information

Career opportunities

Upon graduation students will be prepared to work in public and private institutions that collect cultural objects, such as museums of various types, historical sites, historical societies, libraries, archives, and corporations. Students are also prepared to further their education in graduate programs, such as an MA in museum studies, art history, informatics, or arts management; an MLS in library and information studies; or an MBA. The Bureau of Labor Statistics reports that there were approximately 27,000 archivists, curators, and museum technicians in the U.S. in 2004 and about 159,000 librarians. Both areas are expected to grow as current professionals reach retirement age and will have to be replaced with

those whose education has prepared them for the new responsibilities of the field.

Advisers

Every student is assigned a faculty adviser who provides academic advising and career counseling. All of the fine arts department faculty members in cultural resource studies hold the highest degrees in their field and all have been published within their areas of expertise.

Philosophy, BS

http://www.rit.edu/philosophy

John T. Sanders, Program Coordinator
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Program overview

The philosophy program provides a thorough grounding in the three main areas of philosophy (history, value theory, and reasoning/epistemology), as well as a four-course specialization within philosophy. The program concludes with a senior thesis integrating philosophy with a field of application.

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 philosophical training. Philosophy students are taught to evaluate complex problems, identify and examine underlying principles, investigate issues from diverse perspectives, and communicate clearly in both written and oral forms.

Students combine philosophy with a core competence (or even a double major) in another discipline, encouraging them to creatively pursue cross-disciplinary relationships. The program is designed for students to obtain employment after graduation, or to pursue an advanced degree.

Curriculum

Philosophy Core

History of Philosophy

Required courses:

0509-456	Ancient Philosophy
0509-457	Modern Philosophy

Choose one of the following:

0509-462	Contemporary Philosophy
0509-467	Medieval Philosophy
0509-469	19th Century Philosophy

Value Theory

Required course:

0509-476	Ethical Theory

Choose one of the following courses:

0509-442	Philosophy of Art/Aesthetics
0509-445	Social and Political Philosophy
0509-446	Philosophy of Law

Reasoning/Epistemology

Choose one of the following courses:

0509-441	Logic
0509-443	Philosophy of Science
0509-455	Theories of Knowledge

Philosophy specialization

Students complete four courses in an area of specialization within philosophy, usually related to their professional core. Seven preapproved specializations are provided, but students may develop additional options with faculty advising.

Philosophy of Mind and Cognitive Science

0509-441	Logic
0509-458	Philosophy of Mind
0509-468	Metaphysics
0509-472	Minds and Machines
0509-473	Technology and Embodiment
0509-474	Philosophy of Language
0509-444	Great Thinkers
0509-449	Special Topics

Philosophy of Science and Technology

0509-441	Logic
0509-443	Philosophy of Science
0509-452	Philosophy of Technology
0509-455	Theories of Knowledge
0509-473	Technology and Embodiment
0509-444	Great Thinkers
0509-449	Special Topics

Applied Ethics

0509-446	Philosophy of Law
0509-447	Contemporary Moral Problems
0509-448	Philosophy of Peace
0509-451	Professional Ethics
0509-453	Environmental Philosophy
0509-444	Great Thinkers
0509-449	Special Topics

Philosophy of the Social Sciences and Political Philosophy

0509-445	Social and Political Philosophy
0509-446	Philosophy of Law
0509-447	Contemporary Moral Problems
0509-448	Philosophy of Peace
0509-453	Environmental Philosophy
0509-454	Feminist Theory
0509-459	Philosophy of the Social Sciences
0509-460	East Asian Philosophy
0509-473	Technology and Embodiment
0509-444	Great Thinkers
0509-449	Special Topics

Philosophy of Art and Aesthetics

0509-442	Philosophy of Art and Aesthetics
0509-445	Social and Political Philosophy
0509-470	Philosophy and Literary Theory
0509-471	Philosophy of Film
0509-475	Philosophy of Vision and Imaging
0509-444	Great Thinkers
0509-449	Special Topics

History of Philosophy

COURSE		
0509-460	East Asian Philosophy	
0509-461	American Philosophy	
0509-462	Contemporary Philosophy	
0509-465	Critical Social Theory	
0509-466	Existentialism	
0509-467	Medieval Philosophy	
0509-469	Nineteenth-Century Philosophy	
0509-444	Great Thinkers	
0509-449	Special Topics	

Philosophy of Law

COURSE		
0509-441	Logic	
0509-445	Social and Political Philosophy	
0509-446	Philosophy of Law	
0509-451	Professional Ethics	
0509-455	Theories of Knowledge	
0509-444	Great Thinkers	
0509-449	Special Topics	

Seminar in philosophy

This course is an examination of a selected area or topic of philosophy at an advanced undergraduate level.

Senior thesis

In this course, required during the senior year, students research and write a substantial paper on a specific philosophical topic. Students are encouraged to investigate a particular question in depth, likely building on their philosophy specialization and their professional core. Students choose a faculty member to serve as a primary adviser and to help identify a subject topic. The finished thesis is discussed and examined by a committee including two other faculty members.

Program electives

Program electives can include philosophy courses not used to satisfy program requirements or complementary courses outside of the department of philosophy. Students are encouraged, with proper advising, to seek out non-philosophy courses that complement their philosophy specializations.

Professional core

Students complete a series of courses designed to provide foundational knowledge in a professional/technical discipline outside of philosophy, which complements their studies in the program. The professional core can be fulfilled with a minor (outside of philosophy), by completing an individually designed professional core (subject to the approval of the student's philosophy adviser and the external department), or by completing a double major.

Please note that for transfer students, some (or even all) of the professional core requirements might be satisfied by courses already taken in the former department.

Philosophy, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0509-456	Ancient Philosophy	4
0509-457	Modern Philosophy	4
0509-476	Ethical Theory	4
	Professional Core or Free Electives	8
	Liberal Arts*	16
	Mathematics and Science Requirement‡	12

COURSE		QTR. CR. HRS.
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
	Philosophy Core Courses	12
	Professional Core or Free Electives	12
	General Education Electives	8
	Liberal Arts*	8
	Mathematics and Science Requirement‡	8
	Wellness Education†	0
Third Year		
	Philosophy Specialization	12
	Professional Core or Free Electives	8
	Program Electives	12
	Liberal Arts*	12
	General Education Electives	4
Fourth Year		
0509-450	Seminar in Philosophy	4
0509-595	Senior Thesis	4
	Philosophy Specialization	4
	Professional Core or Free Elective	4
	Program Electives	12
	General Education Electives	12
Total Quarter Credit Hours		**184-186**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science General Education Curriculum for more information.

Additional information

Advising

Each student is assigned a faculty adviser who will assist in planning course schedules, professional/technical core requirements, and a philosophy specialization area.

Faculty

The philosophy department's faculty are outstanding teachers. They are active scholars, publishing regularly in journals, editing and authoring books, and organizing and delivering papers at conferences at RIT and elsewhere in the United States and abroad.

Political Science, BS

http://www.rit.edu/cla/politicalscience

Sean Sutton, Department Chairperson
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Program overview

The bachelor of science degree in political science tightly integrates the traditional fields of American government and international relations in order to prepare students for a life and career in an increasingly globalized world. Moreover, the program includes tracks of courses in three areas: politics and life sciences, digital politics and the information age, and political institutions. Through these tracks students can study the influence of recent advances in biology and biotechnology on how we understand ourselves as human beings and citizens or the use of information technology for political organization and communication. There are few undergraduate political science programs 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.

The program will prepare principled leaders and responsible citizens for fruitful careers in the public and private sectors.

Curriculum

Core courses

The program consists of four core courses, plus a capstone project, designed to introduce students to the general themes of the degree program. The program culminates in a political science capstone course, which will tie together the themes of the program through a seminar and significant writing project.

0513-211	American Politics
0513-214	Introduction to International Relations
0513-425	Politics and the Life Sciences
0513-426	Cyberpolitics
0513-500	Political Science Capstone

Program tracks

The overarching goal of the political science program is to prepare undergraduates for the challenges of life and a career in a world that is increasingly globalized, where the application of biotechnology and biomedicine will become common, and where social computing will shape and influence democratic government and the wider community. Students are required to choose one track so that they can study in depth the political impact of modern biology and biotechnology, the changing role of political institutions in a globalized world, or develop technical skills drawn from RIT's business school and information technology program to give them firsthand experience in the technologies that increasingly influence political organization and communication.

Politics and the life sciences
Choose four of the following courses (16 credits):

1001-421	Genetics
1001-311	Cell Biology
1001-365	Evolutionary Biology
1001-359	Evolution, Creationism, and Intelligent Design
0508-484	Environmental Policy
0509-473	Technology and Embodiment
0513-427	Evolutionary International Relations
0513-428	Evolution and Law
0513-429	Primate Politics

Digital politics and the information age
Choose four of the following courses (16 credits):

0112-340	Database Management Systems
0112-440	Database Systems Development
0509-217	Ethics and the Information Age
0513-454	Political Parties and Voting
0535-410	Computer Mediated Communication
4002-320	Introduction to Multimedia: Internet and the Web
4002-310	Digital Video for the WWW
4002-360	Introduction to Database and Data Modeling
4002-409	Website Design and Implementation
4002-535	Network-Based Multimedia
4002-484	Fundamentals of Database Client/Server Connectivity

Political institutions
Choose four of the following courses (16 credits):

0513-451	Legislative Process
0513-452	The American Presidency
0513-456	Judicial Process
0513-487	International Law and Organizations
0513-461	Introduction to Comparative Politics
0513-490	International Political Economy

Electives

Students are required to take eight courses (32 quarter credit hours) from the department's American politics and international relations/comparative government offerings with a minimum of three courses from each area. This requirement recognizes the increasing interdependence of domestic and international politics in this era of globalization. Students will focus their studies on American politics, international relations, and comparative politics to provide them with an integrated national and global political perspective.

Political science, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0513 310	Principles of American Politics	4
0513-311	Fundamentals of International Relations	4
0513-425	Politics and the Life Sciences	4
	Liberal Arts*	20
	Math and Science Requirements‡	16
	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
0513-426	Cyberpolitics	4
	Political Science Program Electives	12
	Liberal Arts*	16
	Math and Science Requirements‡	8
	Free Electives	8
	Wellness Activity†	0
Third Year		
	Political Science Track	12
	Political Science Program Electives	12
	Liberal Arts	16
	Free Electives	8
	Cooperative Education (optional) (summer)	Co-op
Fourth Year		
	Political Science Track	4
	Political Science Program Electives	12
0513-500	Political Science Capstone	4
	Liberal Arts*	12
	Free Elective	4
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science General Education Requirements for more information. Students are encouraged to take the general biology sequence in preparation for the program's emphasis on politics and the life sciences.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Double majors

The political science program is designed to comply with RIT's emphasis on curricula creativity, flexibility, and innovation. The program includes five free electives (20 credits), and its interdisciplinary and intercollegiate character ensures that pre-approved double majors in political science and other degree programs within the college and the university as a whole are readily available to students. Students in diverse fields such as computer science, criminal justice, economics, and philosophy have signed up for double majors with political science.

Accelerated dual degree option

The Saunders College of Business and the political science department in the College of Liberal Arts offer a 4+1 BS/MBA option that permits qualified students who have earned a BS degree in political science to pursue an MBA. Selected MBA courses may be waived based upon completion of certain undergraduate courses. Students may be able to complete the MBA program in as few as four or five academic quarters.

Experiential education

After completing 96 credit hours (or third-year status), students are eligible to participate in optional learning experiences that may include an internship and cooperative education (co-op). An internship or co-op provides students with hands-on experience in a variety of environments, from government agencies, non-profits, nongovernmental agencies, to political campaigns. These opportunities provide students with employment experience as well as the opportunity to further develop skills in their chosen profession.

Study abroad

A study abroad opportunity provides students with a way to enhance their understanding of global politics and culture. They 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. To learn more about the Study Abroad program, please refer to the Academic Enrichment section of this book.

Career opportunities

A degree in political science will prepare undergraduate students for careers in law; local, state, and national government; foreign service; business; government relations; and other areas of the private and public sector in which knowledge of the political process and the strengths and limitations of modern democracy and modern society is appropriate. In addition, students are well-prepared for graduate study in a variety of fields, ranging from business and law to political science and public policy.

Advising

Each student in the political science program is assigned a faculty adviser who will help with registration, scheduling, course selection, academic concerns, and career counseling.

Faculty

The political science faculty have extensive experience in the classroom and are well-published in their fields of expertise. Faculty members have broad backgrounds in addition to their political science training, including criminal justice, literature, philosophy, political campaigning, political polling, and public policy. Several members have worked for the United Nations and in Washington, D.C., think tanks.

Professional and Technical Communication, BS

http://www.rit.edu/ptc

Patrick Scanlon, Department Chairperson
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Program overview

The bachelor of science degree in professional and technical communication unites advanced education in the theory and practice of spoken, written, and visual communication with extensive instruction in a professional or technical program. This unique combination fosters an understanding of the central concepts and processes associated with the field of communication and a working familiarity with the principles and practices of a particular professional/technical field.

Graduates are qualified for a number of different functions as communications specialists within a specific professional area. Their career opportunities are numerous and varied. The degree also prepares them for graduate work in communication and related academic disciplines.

Curriculum

Required communication courses

0535-200	Foundations of Communications
0535-311	Rhetorical Theory
0535-315	Quantitative Research Methods
0535-317	Critical Research Methods
0535-412	Communication Law and Ethics
0502-444	Technical Writing
0535-445	Theories of Communication
0535-446	Writing the Technical Manual
0535-450	Visual Communication
0535-462	Digital Design in Communication
0535-481	Persuasion
0535-482	Mass Communications
0535-501	Public Speaking
0535-532	Professional Writing
0535-595	Senior Thesis in Communication

Professional core

The degree requires students to complete a professional core of five courses focused on a professional or technical area of interest. These courses may be taken from programs within the College of Science, the College of Imaging Arts and Sciences, the E. Philip Saunders College of Business, or from programs in other RIT colleges. Alternatively, an individually designed professional core, one tailored to a student's specific study and career interests, is available with the approval of an academic adviser and the program chairperson.

University-wide electives (20 credit hours)
Five courses

Program elective (4 credit hours)
Choose one of the following courses:

0535-316	Qualitative Research Methods
0535-410	Computer-Mediated Communication
0535-411	Health Communication
0535-414	Interpersonal Communication
0535-415	Organizational Communication
0535-416	Newswriting
0535-417	Newswriting II
0535-420	Argument and Discourse
0535-421	Public Relations
0535-422	Ethics in Technical Communication
0535-426	Archival Research
0535-452	Uses and Effects of the Mass Media
0535-460	Copywriting and Visualization
0535-461	Principles of Advertising
0535-463	Campaign Management and Planning
0535-464	Public
0535-465	Rhetoric of Political Campaigns
0535-470	Law and Ethics of the Press
0535-471	History of Journalism
0535-472	News Editing
0535-474	Reporting in Specialized Fields
0535-475	eJournalism
0535-476	eJournalism II
0535-483	Small Group Communication
0535-484	Rhetoric of Race Relations
0535-490	Persuasion and Social Change
0535-502	Speechwriting
0535-503	Advanced Public Speaking
0535-520	Intercultural Communication
0535-525	Special Topics in Communication
0535-534	Communication and Documentary Film
0535-550	Film and Society
0535-580	International Media

Professional and technical communication, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0535-200	Foundations of Communication	4
0535-311	Rhetorical Theory	4
0535-501	Public Speaking	4
0535-462	Digital Design in Communication	4
4002-206	Web Foundations	4
	Liberal Arts*	8
	Mathematics and Science Requirement‡	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
0535-481	Persuasion	4
0502-444	Technical Writing	4
0535-450	Visual Communication	4
0535-482	Mass Communications	4
	PTC Elective	4
	Professional Core	12
	Liberal Arts*	16
	Wellness Education†	0

COURSE		QTR. CR. HRS.
Third Year		
0535-445	Theories of Communication	4
0535-412	Communication Law and Ethics	4
	Professional Core	8
	General Education Electives	16
	Mathematics Requirement‡	4
	University-wide Elective	4
	Cooperative Education (two quarters)	Co-op
Fourth Year		
0535-315	Quantitative Research Methods	4
0535-317	Critical Research Methods	4
0535-532	Professional Writing	4
0535-446	Writing the Technical Manual	4
0535-595	Senior Thesis in Communication	4
	Liberal Arts*	12
	University-wide Electives	16
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science General Education Curriculum for more information.

Cooperative education
Students complete two quarters of cooperative education as part of the program. Co-op is paid, practical work experience that deepens students' knowledge of their academic fields, allows them to determine their suitability for a particular professional position, and increases their chances for advantageous placement upon graduation. Many students use the extra income earned on co-op to help offset college expenses.

Students have access to a broad range of co-op opportunities, and there is no restriction on geographic location as long as the position is related to communication. The Office of Cooperative Education and Career Services assists students in identifying co-op and permanent placements with a large and diverse number of employers. Students have held co-ops across the United States at such organizations as Greenpeace, Bausch & Lomb, the Rochester Memorial Art Gallery, the Chicago Hearing Society, Eastman Kodak Co., City of New York Parks & Recreation, and the U.S. House of Representatives.

Admission requirements
For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Students
The size of the program, averaging about 60 students, ensures close contact with the program's faculty and other students. The program attracts energetic students who are actively involved in numerous communication-related extracurricular activities, including RIT's FM radio station, WITR, and RIT's weekly magazine, *Reporter*. Many students have served as residence hall advisers as well as representatives to, and leaders of, student government.

Advisers
Every student in the program is assigned a faculty adviser who is available for both academic advising and career counseling.

Students find that frequent consultation with their adviser is helpful in planning course scheduling, co-ops, professional core areas, and post-graduation work. In addition to their faculty adviser, students are assigned a co-op and placement adviser, located in the Office of Cooperative Education and Career Services. Finally, peer mentors—other professional and technical communication students—are available to answer questions about classes, clubs on campus, student-run activities, and other matters from the student's perspective.

Faculty

Nearly all 18 faculty members in the department of communication hold the highest degrees in their fields. All have proven teaching ability and are committed to professional growth in their areas of expertise. In addition to their teaching, research, and other professional responsibilities, faculty members act as academic advisers for students in the program. The department also offers students the opportunity to participate in specialized course work and research with faculty members.

Careers

Upon graduation, students are prepared for immediate employment and long-term professional growth within the broad field of communication. Graduates qualify for positions in business, government, and the not-for-profit sector, and are employed as technical editors and writers, sales and marketing coordinators, document specialists, broadcast news and segment researchers, public relations practitioners, and staff members for various federal and state government officials.

Graduate study

The program also prepares students for graduate study in law, public relations, communication, health services, and management. The department of communication offers an MS program in communication and media technologies. Please refer to the *Graduate Bulletin* or the department website for more information.

Psychology, BS

http://www.rit.edu/cla/psychology

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Program overview

The bachelor of science degree in psychology provides students with a strong grounding in the discipline of psychology, integrated with a technological focus. Upon entry, students are assigned a faculty adviser to mentor their progress through the program. Students also are provided with curriculum planning strategies and career discussions through the program's Freshman Seminar.

Curriculum

The program is unique and encompasses three key elements: the choice among four interdisciplinary tracks, a technical/professional concentration, and a cooperative education requirement.

Interdisciplinary tracks

Students choose one of the following interdisciplinary tracks: visual perception, information processing, biopsychology, or clinical psychology. Technology is integrated into these tracks to produce

a nontraditional and career-oriented psychology major. The tracks are also active fields of research in psychology, and students receive training that provides a strong foundation for graduate school and employment in related fields.

The visual perception track focuses on human perceptual systems. Vision is presented as the integration of anatomy, physiology, and behavior. Students learn psychophysical methods. The track covers cutting-edge topics such as color perception, the retinal mosaic, and neural plasticity. It stresses current research showing that visual perception is a living and growing field.

The information processing track uses an interdisciplinary approach to study cognitive processes such as judgment and decision making, memory, learning, language, problem solving, attention, and perception. The track explores the interaction of human factors, psychology, and technology.

The biopsychology track studies brain function as the basis of behavior. It focuses on topics such as lateralization, cortical specialization, brain injury, and psychopharmacology. Psychophysiological measures (including EEG, EMG, and skin conductance) are covered in depth along with the relationship between brain chemistry and behavior. Students perform laboratory work on the brain and its relationship to attention, memory, language, perception, and psychological disorders.

The clinical psychology track emphasizes the scientific and empirical foundations of clinical and applied work. Empirically based methods are introduced to understand and modify human psychological problems. This track prepares students for graduate programs in mental health.

Technical/professional concentration

The program seeks students with an aptitude for technical and quantitative reasoning as well as an interest in psychology. There is sufficient curricular flexibility to permit completion of a technical concentration.

Cooperative education

The program requires that students complete a cooperative education experience for two quarters between the sophomore and senior years of course work. The co-op experience is in a psychology-related field and does not carry academic credit.

Psychology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0514-201	Freshman Seminar	1
0514-210	Introduction to Psychology	4
0514-440	Childhood and Adolescence	4
0514-443	Cognitive Psychology	4
0514-444	Social Psychology	4
1004-211, 212, 231, 232	Human Biology I, II with Lab	8
1016-225	Algebra for Management Science	4
4002-206	Web Foundations	4
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment I, II	2
	Wellness Education†	0
Second Year		
0514-315	Scientific Writing	4
0514-350	Psychological Statistics	4
0514-400	Experimental Psychology	4
0514-446	Psychology of Personality	4

COURSE		QTR. CR. HRS.
0514-447	Abnormal Psychology	4
0514-448	Industrial/Organizational Psychology	4
1016-319, 320	Data Analysis I, II	8
	Liberal Arts*	12
	Technical/Professional Concentration	4
	Cooperative Education (summer quarter)	Co-op
Third Year		
	Interdisciplinary Courses	12
	Technical/Professional Concentration	8
	Liberal Arts*	20
	University Electives	8
	Cooperative Education (summer quarter)	Co-op
Fourth Year		
	Interdisciplinary Course	4
	University Electives	12
0514-596, 597	Senior Project in Psychology I, II	8
	General Education Electives	16
Total Quarter Credit Hours		**183**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirements for more information.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Additional information

Career opportunities

The unique requirements of this program ensure that each student should be well-prepared for advanced study in psychology or a related field, employment in industry or in human service agencies, or other career opportunities.

Public Policy, BS

http://www.rit.edu/cla/publicpolicy

Deborah Blizzard, Department Chairperson
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Program overview

The public policy program explores the intersection of public policy, technology, and our natural world. The program provides students with an opportunity to integrate their interests in science, technology, government, economics, and other social science fields. The BS degree combines an understanding of these fields with the analytical tools needed to study the impact of public policy on society. Through the program, students acquire policy analysis skills, with particular attention on analyzing policies that emerge in a technology-based society. The program has many key features, including:

Science and technology—Graduates are trained in the vernacular, methodologies, and problem-solving approaches of the sciences and technologies relevant to their chosen policy study track, and they possess a well-grounded familiarity in that area. Policy tracks include environmental policy, information and communications policy, energy policy, biotechnology policy, and others designed to meet the students' interests. Students have an option of tailoring a track to their interests.

Interdisciplinary—A sequence of eight public policy courses ensures the program provides integration of diverse disciplines. This sequence makes up the core of the curriculum and enables students to integrate diverse subjects and apply them to the analysis of public policy.

Integrated qualitative and quantitative skills—The program balances both quantitative and qualitative approaches to the analysis of public policy so that students are able to achieve a full systems-level grasp of policy issues.

Solid grounding in liberal arts—While our graduates will have quantitative and qualitative training, by the end of their academic career they also will have taken liberal arts courses with a broad disciplinary range. It is this grounding in humanistic values combined with technology and science that makes our program both balanced and unique.

Curriculum

The curriculum is designed to train students to think and analyze policy in terms of complex, interconnected systems. This training is in high demand in the public, private, and nonprofit sectors.

Track courses

Six track courses demand that students apply skills acquired in public policy courses to specific policy areas or domains. Students can concentrate in areas such as environmental policy, information and communications policy, energy policy, and biotechnology policy, among others. Many track courses, including those that provide a firm grounding in the science and technology aspects of the chosen track, are offered through other programs and colleges of the university. This gives students an opportunity to interact and study with researchers and faculty from a broad range of disciplines.

Public policy colloquium

This required, noncredit-bearing colloquium meets twice each quarter. The colloquium is used to bring in policy practitioners and academics to talk about careers, research, and special topics. The colloquium series helps build and sustain a sense of community among policy majors by providing a context for their course work and research.

Public policy, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
Public Policy Core:		
0521-400	Foundations of Public Policy	4
0508-441	Science and Technology Policy	4
Foundations:		
0511-211	Principles of Microeconomics	4
0511-402	Principles of Macroeconomics	4
0513-211	American Politics	4
	Mathematics and Science Requirement‡	20
	Liberal Arts*	4
	Free Elective	4
	Policy Colloquium	0

COURSE		QTR. CR. HRS.
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
Public Policy Core:		
521-401	Values and Public Policy	4
521-406	Qualitative Policy Analysis	4
Foundations:		
0511-450	Benefit-Cost Analysis	4
1016-319	Data Analysis I	4
Choose one of the following:		4
0511-457	Applied Econometrics	
1016-320	Data Analysis II	
0513-458	American Political Thought	4
0508-460	Environment and Society	4
	Liberal Arts*	20
	Policy Colloquium	0
	Wellness Education†	0
Third Year		
Public Policy Core:		
0521-402, 403, 404	Policy Analysis I, II, III	12
	Public Policy Track Courses	12
	Liberal Arts*	12
	Free Electives	12
	Cooperative Education (Summer)	Co-op
	Policy Colloquium	0
Fourth Year		
Public Policy Core:		
0521-405	Senior Project I	4
0521-408	Technological Innovation and Public Policy	4
	Public Policy Track Courses	12
	Liberal Arts*	12
	Free Elective	4
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science General Education Curriculum for more information.
Note: Students may take up to 12 quarter credit hours of graduate-level courses in the fourth year if they are enrolled in the BS/MS program. This increases the total credit hours to 198.

Additional information

Accelerated dual degree option
Instead of the four-year BS degree, students can choose an accelerated five-year option leading to a BS in public policy and an MS in science, technology, and public policy. The five-year BS/MS option provides graduates with a considerable advantage in many policy-related careers.

Cooperative education
Students complete a co-op or internship within the private, public, or nonprofit sectors. The co-op experience makes our students attractive to a wide range of agencies, businesses, and organizations.

Employment opportunities
Exciting career opportunities await professionals who can integrate an understanding of science and technology with public policy decision making. RIT public policy graduates are uniquely positioned to take advantage of the growing job market in public policy, with career options in a range of fields within the private, government, and nonprofit sectors.

Faculty
Faculty have extensive experience in the classroom and as practitioners in their respective fields. In addition to public policy, faculty members have a broad range of backgrounds, including physics, engineering, law, environmental science, energy management, and information technology.

Urban and Community Studies, BS

http://www.rit.edu/cla/sociology/urban/

Christine Kray, Department Chairperson
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Program overview

Eighty percent of U.S. residents work, learn, and raise families in metropolitan areas. Countries around the world are rapidly urbanizing, and the urban populations of the world are linked participants in a global economic and cultural system. Cities also present challenges regarding land use, access to resources, cross-cultural communication, pollution, crowding, and traffic. The prominence and interdependence of today's urban landscape create a pressing need for individuals who possess the skills, aptitude, and commitment to create sustainable cities and communities for our shared future.

The bachelor of science program in urban and community studies explores the institutional and structural forces that shape, interconnect, and subdivide geographically bounded communities. The program's interdisciplinary combination of classes in the liberal arts, sciences, and computing gives students a broad knowledge base that lets them approach urban issues from a number of perspectives.

Students will enter the work force technically grounded in and knowledgeable of urban theories, policies, and practices. Upon graduation, students will be equipped to take on positions in many fields, including city and regional government, social services, and local or international development.

Curriculum

Core courses
Students will complete nine core courses that provide a strong foundation in the field.

0515-442	The Urban Experience
0515-413	Urban Planning and Policy
0515-406	Qualitative Methods
0526-440	Quantitative Methods
0515-444	Social Change
0510-445	Global Cities
0515-485	Diversity in the City
0526-441	GIS Applications in Urban and Community Studies
4002-320	Introduction to Multimedia: The Internet and the Web

Tracks
The urban and community studies program offers three distinct tracks, allowing students to focus their interests in one particular area. The urban and community development track investigates the role of public, private, and nonprofit organizations in how cities function, with an emphasis on topics such as housing, urban planning, neighborhood revitalization, and crime and justice. A

second track, communities in global perspective, is designed for students interested in regional economic and cultural issues within international settings. The third track, community: race, class, and gender, examines how political, economic, social, and environmental forces shape the life experiences of different subgroups. Special attention is paid to issues such as poverty, racial segregation, gender inequality, work and labor, and family life.

Urban and community studies, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0515-442	The Urban Experience	4
0515-444	Social Change	4
Choose one of the following courses:		4
0515-210	Foundations of Sociology	
0510-210	Cultural Anthropology	
	Mathematics and Science Requirements‡	22
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
0526-440	Quantitative Methods	4
0515-406	Qualitative Methods	4
0515-485	Diversity in the City	4
0510-445	Global Cities	4
0515-413	Urban Planning and Policy	4
4002-320	Introduction to Multimedia: The Internet and the Web	4
	Liberal Arts*	24
	Wellness Education†	0
Third Year		
0526-441	GIS Applications in Urban and Community Studies	4
	UCS Track	24
	General Education Electives	20
	Cooperative Education or Internship (summer)	Co-op
Fourth Year		
	UCS Track	4
	General Education Electives	12
	Senior Thesis	4
	Free Electives	20
Total Quarter Credit Hours		**184**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science General Education Curriculum.

Additional information

Cooperative education and field experience
Students will perform field work with government and not-for-profit agencies and organizations through summer- or quarter-long internships or co-op assignments.

Accelerated dual degree option
The college offers an accelerated BS/MS program for students interested in pursuing advanced study. Students may obtain a BS degree in urban and community studies and an MS degree in science, technology, and public policy in five years. Students are encouraged to speak with an adviser to discuss planning for this option.

Liberal Arts Exploration, Undeclared

http://www.rit.edu/cla/exploration
John S. Smithgall, Program Director
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Program overview
The liberal arts exploration program 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 program for up to two years or 87 credit hours before they choose a major. This option offers students the flexibility and time to explore a variety of majors within the College of Liberal Arts without delaying their graduation.

Students will work closely with academic and faculty advisers to select courses each quarter based on ability, interests, and goals. Students will take on average 16 credits each quarter and may explore courses in any one of the college's degree programs. Through the exploration route, students may elect to complete a double major or multiple minors within the College of Liberal Arts.

Curriculum

Liberal arts exploration, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Liberal Arts*	20
	Mathematics and Science Requirements‡	8
	Liberal Arts Electives**	12
1105-051, 052	First-Year Enrichment	2
0520-201	Career Exploration Seminar	1
	Wellness Education†	0
Second Year		
	Liberal Arts*	16
	Mathematics and Science Requirements‡	12
4002-206	Web Foundations	4
	Liberal Arts Electives (chosen in consultation with an adviser)	12
	Wellness Education†	0
Total Quarter Credit Hours		**87§**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see Mathematics and Science General Education Curriculum.
§ Remaining degree requirements will be determined by selected major.
** Liberal arts electives are chosen in consultation with an adviser.

College of Liberal Arts

James J. Winebrake, BS, Lafayette College; MS, Massachusetts Institute of Technology; Ph.D., University of Pennsylvania—Dean; Professor

M. Ann Howard, BS, Cornell University; JD, Rutgers University—Senior Associate Dean; Professor

Babak Elahi, BA, San Diego State University; MA, University of California at San Diego; Ph.D., University of Rochester—Associate Dean; Associate Professor

John S. Smithgall, BA, Roberts Wesleyan College; MS, University of Rochester — Assistant Dean for Student Services

Communication

Patrick M. Scanlon, BA, Albany State University; MA, Ph.D., University of Rochester—Department Chair; Professor

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Andrea Hickerson, BA, Syracuse University; MA, University of Texas at Austin; Ph.D., University of Washington—Assistant Professor

Keith B. Jenkins, BA, University of Arkansas; MA, Ph.D., Florida State University— Coordinator of Undergraduate Degree Programs; Associate Professor

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Hinda Mandell, BA, Brandeis University; MA, Harvard University; Ph.D., Syracuse University—Assistant Professor

Kelly Norris Martin, BA, John Carroll University; MS, Ph.D., North Carolina State University—Assistant Professor

David R. Neumann, BA, Ithaca College; MA, Ph.D., Bowling Green State University— Coordinator of Undergraduate Minors, Concentrations, and Service Courses; Professor

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Criminal Justice

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John McCluskey, BA, MA, Ph.D., State University of New York at Albany—Associate Professor

Cynthia Perez McCluskey, BA, University of California at Irvine; MA, Ph.D., State University of New York at Albany—Associate Professor

Judy Porter, BA, University of Northern Colorado; MA, New Mexico State University; Ph.D., University of Nebraska at Omaha— Field Experience Director; Assistant Professor

Christopher Schreck, BA, University of Florida; MA, University of Arizona; Ph.D., Pennsylvania State University— Undergraduate Coordinator; Professor

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Tony Smith, BA, MA, Ph.D., State University of New York at Albany—Assistant Professor

Economics

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Bharat Bhole, BA, MA, University of Mumbai (India); Ph.D., University of Southern California—Associate Professor

Jeffrey Burnette, BA, State University of New York at Albany; MA, Ph.D., State University of New York at Buffalo—Senior Lecturer

Shatakshee Dhongde, BA, University of Pune (India); MA, Gokhale Institute of Politics and Economics, Pune (India); Ph.D., University of California at Riverside—Assistant Professor

Ayse M. Erdogan, BA, MA, Bogazici University (Turkey); MA, Ph.D., University of Minnesota—Assistant Professor

Javier Espinosa, BS, Miami University; MA, Ph.D., University of Maryland at College Park—Assistant Professor

Bridget Gleeson Hanna, B.Comm, University College at Galway (Ireland); MA, University College at Dublin (Ireland); MA, University of Wisconsin at Madison—Associate Professor

Thomas D. Hopkins, BA, Oberlin College; MA, Ph.D., Yale University—Professor

Jeanette C. Mitchell, BA, Westminster College; Ph.D., University of Utah—Associate Professor

Vicar Valencia, BS, University of the Philippines; MC, Curtin University of Technology (Australia); Ph.D., University of Melbourne (Australia)—Visiting Assistant Professor

M. Jeffrey Wagner, BA, University of Missouri; MA, Ph.D., University of Illinois—Associate Professor

English

Lisa M. Hermsen, BA, Briar Cliff University; MA, University of Missouri at Columbia; Ph.D., Iowa State University—Department Chair; Associate Professor

Sharon M. Beckford-Foster, BA, MA, Ph.D., York University—Visiting Assistant Professor

Doris A. Borrelli, BA, Ph.D., Cornell University—Associate Professor

Mary Lynn Broe, BA, St. Louis University; MA, Ph.D., University of Connecticut—Caroline Werner Gannett Professor in the Humanities

A. J. Caschetta, BA, Nazareth College; MA, University of Missouri; Ph.D., New York University—Lecturer

Babak Elahi, BA, San Diego State University; MA, University of California at San Diego; Ph.D., University of Rochester—Associate Dean; Associate Professor

Vincent F. A. Golphin, BA, Sacred Heart College; MA, University of Dayton; Ph.D., Binghamton University—Assistant Professor

Gail Hosking, BA, Alfred University; MS, Iowa State University; MFA, Bennington College—Lecturer

Julie Johannes, BA, State University College at Geneseo; MA, University of Rochester—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—Writing Director; Associate Professor

Cecillia Ovesdotter Alm, BA, Universitat Wien (Austria); MA, Ph.D., University of Illinois—Visiting Assistant Professor

Amit Ray, BA, State University of New York at Buffalo; MA, Ph.D., University of Michigan—Associate Professor

Linda Reinfeld, BA, University of California at Los Angeles; MA, Ph.D., State University of New York at Buffalo—Lecturer

John Roche, BA, University of Connecticut; MA, University College Dublin (Ireland); Ph.D., State University of New York at Buffalo—Associate Professor

Sandra E. Saari, AB, Carleton College; MA, Ph.D., Occidental College—Professor

Richard Santana, AA, LaGuardia Community College; BA, City College of New York; MA, Hunter College; Ph.D., City University of New York Graduate School and University Center—Associate Professor

Laura Shackelford, BA, University of Minnesota; MA, Ph.D. Indiana University—Assistant Professor

Elena Sommers, BA, MA, Moscow State Pedagogical University (Russia); MA, University of Notre Dame; Ph.D., University of Rochester—Senior Lecturer

Thomas M. Stone, BA, Northern Arizona University; MA, Bucknell University; Ph.D., University of Rochester—Lecturer

Paulette M. Swartzfager, BA, St. Mary's Dominican College; MA, Louisiana State University—Lecturer

Sharon Warycka, BA, University of Pennsylvania; MFA, Vermont College—Lecturer

Dianna Winslow, BA, MA, California State University—Visiting Assistant Professor

Fine Arts

Tina Lent, BA, MA, University of California at Los Angeles; Ph.D., University of Rochester—Department Chair; Professor

Carl J. Atkins, BM, Indiana University; DMA, Eastman School of Music; MM, New England Conservatory—Professor

Charles D. Collins, AB, Rutgers University; MA, Ph.D., University of Iowa—Professor

Peter W. Ferran, BA, College of the Holy Cross; MA, Ph.D., University of Michigan—Professor

Elizabeth Goins, BA, University of Delaware; Ph.D., University of London—Assistant Professor

Jonathan Kruger, BA, Carthage College; MM, DMA, Eastman School of Music—Associate Professor

Jessica Lieberman, BA, University of Pennsylvania; Ph.D., University of Michigan—Assistant Professor

Cyril Reade, BFA, Université Laval (Canada); MFA, Concordia University; Ph.D., University of Rochester—Assistant Professor

Michael E. Ruhling, BA, Goshen College; MA, University of Notre Dame; MM, University of Missouri; Ph.D., Catholic University of America—Professor

Edward Schell, B.Mus.Ed., Westminster College; MM, Westminster Choir College—Associate Professor

Modern Languages and Cultures

Hiroko Yamashita, BA, University of Southern Mississippi; MA, Ph.D., The Ohio State University—Department Chair; Associate Professor

Sara Scott Armengot, BA, Oberlin College; MA, Ph.D., Pennsylvania State University—Assistant Professor

Philippe Chavasse, BA, MA, Université Lyon 2 (France); Ph.D., University of Oregon—Associate Professor

Elisabetta D'Amanda, BA, State University of New York; MA, Nazareth College of Rochester; Ph.D. Middlebury College—Lecturer

Diane J. Forbes, BA, State University College at Geneseo; MA, Ph.D., Pennsylvania State University—Associate Professor

Yukiko Maru, BA, Keio University (Japan); MA, MS, University of Illinois at Urbana-Champaign—Senior Lecturer

Masako Murakami, BA, Portland State University, MA, The Ohio State University —Lecturer

Ulrike Stroszeck-Goemans, BA, University of Akron; MA, Auburn University; Ph.D. University of North Carolina at Chapel Hill—Lecturer

Wilma Wierenga, BA, Calvin College; MA, Middlebury College; MS, University of Rochester—Associate Professor

History

Rebecca A. R. Edwards, BA, College of the Holy Cross; Ph.D., University of Rochester—Department Chair; Associate Professor

Joseph M. Henning, BA, Colorado College; MIA, Columbia University; Ph.D., American University—Associate Professor

Michael Laver, BA, Purdue University; MA, Ph.D., University of Pennsylvania—Assistant Professor

Richard Newman, BA, State University of New York at Buffalo; MA, Brown University; Ph.D., State University of New York at Buffalo—Associate Professor

Eric Nystrom, BA, MA, University of Nevada at Las Vegas; Ph.D., Johns Hopkins University—Assistant Professor

Rebecca Scales, BA, Hollins College; MA, University of Georgia; Ph.D., Rutgers University—Assistant Professor

Corinna Schlombs, Diploma, Bielefeld University (Germany); MA, Ph.D., University of Pennsylvania—Assistant Professor

Philosophy

John Capps, BA, St. John's College; MA, Ph.D., Northwestern University—Department Chair; Associate Professor

Jesús Aguilar, BA, Hampshire College and Universidad Veracruzana (Mexico); MA, Universidad Nacional Autónoma de México; Ph.D., McGill University (Canada)—Associate Professor

Silvia Benso, Laurea, University of Torino (Italy); MA, Ph.D., Pennsylvania State University—Professor

Evelyn Brister, BA, Austin College; MA, Ph.D., Northwestern University—Assistant Professor

Timothy H. Engström, BA, MA, Ph.D., University of Edinburgh (Scotland)—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—Coordinator of Undergraduate Degree Program; Professor

Brian Schroeder, BA, Edinboro College; M.Div., Princeton Theological Seminary; MA, Ph.D., State University of New York at Stony Brook—Professor

Evan Selinger, BA, State University of New York at Binghamton; MA, University of Memphis; Ph.D., State University of New York at Stony Brook—Associate Professor

David B. Suits, BA, Purdue University; MA, Ph.D., University of Waterloo (Canada)—Professor

Katie Terezakis, BA, Central Connecticut State University; MA, Ph.D., New School for Social Research—Associate Professor

Lawrence G. Torcello, BA, State University College at Brockport; MA, Ph.D., State University of New York at Buffalo—Assistant Professor

Political Science

Sean Sutton, B. Econ., University of Queensland (Australia); MA, Ph.D., University of Dallas—Department Chair; Associate Professor

Paul H. Ferber, BA, American University; M.Ph., Ph.D., George Washington University—Professor

Joseph Fornieri, BA, State University College at Geneseo; BA, Boston College; Ph.D., Catholic University of America—Professor

Ryan J.B. Garcia, BA, University of California, Los Angeles; M.Ph., Ph.D., Yale University—Assistant Professor

Lauren Hall, BA, State University of New York at Binghamton; MA, Ph.D., Northern Illinois University—Assistant Professor

Edward Kannyo, BA, Makerere University (Uganda); M.Ph., Ph.D., Yale University—Associate Professor

Dongryul Kim, BA, MA, Seoul University (South Korea); Ph.D., University of Virginia—Assistant Professor

John A. Murley, BA, University of Dallas; MA, Ph.D., Claremont Graduate and University Center—Professor

Psychology

Andrew M. Herbert, BS, McGill University (Canada); MA, Ph.D., University of Western Ontario (Canada)—Department Chair; Associate Professor

Suzanne Bamonto, AA, Finger Lakes Community College; BA, State University College at Geneseo; Ph.D., University of Oregon—Associate Professor

Joseph S. Baschnagel, BA, MA, Ph.D., State University of New York at Buffalo—Assistant Professor

Robert Bowen, BA, MA, State University College at Brockport; M.Ed, Ph.D., University of Rochester—Lecturer

Kirsten Condry, BA, Swarthmore College; Ph.D., University of Minnesota—Undergraduate Program Coordinator; Assistant Professor

Caroline M. DeLong, BA, New College of Florida; MA, Ph.D., University of Hawaii—Assistant Professor

Nicholas DiFonzo, MA, Rider College; MA, Ph.D., Temple University—Assistant Professor

John E. Edlund, BS, MA, Ph.D., Northern Illinois University—Assistant Professor

Roger W. Harnish, BA, University of Rochester; MS, Ph.D., Oklahoma State University—Professor

Rhiannon Hart, BA, University of Washington; MS, Ph.D., University of Pittsburgh—Assistant Professor

Jennifer Lukomski, BA, Williams College; MA, Gallaudet University; Ph.D., University of Arizona—Associate Professor

Scott P. Merydith, BA, M.Ed., Ph.D., Kent State University—Professor

Vincent Pandolfi, BA, Lafayette College; MA, Ph.D., Hofstra University—Associate Professor

Esa M. Rantanen, BS, MS, Embry-Riddle Aeronautical University; MS, Ph.D., Pennsylvania State University—Associate Professor

Lindsay Schenkel, BA, St. John Fisher College; MA, Ph.D., University of Nebraska at Lincoln—Assistant Professor

Tywanquila Walker, BS, Vanderbilt University; Ph.D., Cornell University — Assistant Professor

Science, Technology, and Society/Public Policy

Deborah Blizzard, BA, Smith College; MS, Ph.D., Rensselaer Polytechnic Institute—Acting Department Chair; Associate Professor

Robert Alexander, BS, Duke University; MS, MPA, Indiana University at Bloomington; Ph.D., Syracuse University—Visiting Assistant Professor

Thomas Cornell, BA, Rhodes College; MS, Georgia Institute of Technology; Ph.D., Johns Hopkins University—Professor

Paul H. Ferber, BA, American University; M.Ph., Ph.D., George Washington University—Professor

Franz A. Foltz, BS, MA, Pennsylvania State University; Ph.D., Rensselaer Polytechnic Institute—Associate Professor

Ronil Hira, BS, Carnegie Mellon University; MS, Ph.D., George Mason University—Associate Professor

M. Ann Howard, BS, Cornell University; JD, Rutgers University—Sr. Associate Dean; Professor

William A. Johnson, Jr., BA, MA, Howard University—Distinguished Professor

Christine Keiner, BA, Western Maryland College; Ph.D., Johns Hopkins University—Associate Professor

Robert J. Paradowski, BS, Spring Hill College; MA, Brandeis University; Ph.D., University of Wisconsin—Professor

Richard Shearman, BA, Western State College of Colorado; MS, Eastern New Mexico University; Ph.D., State University of New York College of Environmental Science and Forestry—Associate Professor

James J. Winebrake, BS, Lafayette College; MS, Massachusetts Institute of Technology; Ph.D., University of Pennsylvania—Dean; Professor

Sociology and Anthropology

Christine Kray, BA, New Mexico State University; Ph.D., University of Pennsylvania—Department Chair; Associate Professor

Brian P. Barry, BA, St. John Fisher College; M.Sc., Ph.D., Syracuse University—Associate Professor

Conerly Casey, BA, University of Vermont; MA, Ph.D., University of California at Los Angeles—Associate Professor

Kijana Crawford, BA, Tougaloo College; MSW, Atlanta University; MA, Ed.D., University of Rochester—Associate Professor

Paul F. Grebinger, BS, Columbia University; Ph.D., University of Arizona—Professor

Benjamin N. Lawrance, BA, MA, London University; MA, Ph.D., Stanford University—Barber B. Conable Chair in International Studies; Associate Professor

Uli Linke, BA, Macalester College; MA, Ph.D., University of California at Berkeley—Professor

William D. Middleton, BA, University of California at San Diego; MA, San Francisco State University; Ph.D., University of Wisconsin at Madison—Assistant Professor

Martha Morgan, SB, Massachusetts Institute of Technology; MA, Ph.D., University of Arizona—Assistant Professor

Jessica W. Pardee, BA, MA, PhD, Tulane University—Assistant Professor

Vincent Serravallo, BA, State University College at Oswego; MA, University of Kansas; Ph.D., City University of New York Graduate Center—Associate Professor

Danielle Taana Smith, BA, Dartmouth College; MBA, Saint Martin's College; Ph.D., University of South Carolina—Associate Professor

Robert C. Ulin, BA, Whittier College; MA, Ph.D., New School for Social Research—Professor

Jason T. Younker, BA, Cameron University; M.Ed., Oklahoma City University; MS, Ph.D., University of Oregon—Assistant Professor

Distinguished Professorships

College of Liberal Arts

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: Mary Lynn Broe

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: Benjamin N. Lawrance

Center for Multidisciplinary Studies

James Myers, Director

www.rit.edu/cms

Programs of Study

*The manufacturing technology area of study includes certificates in computer-aided drafting, fundamentals of manufacturing management, manufacturing processes, and robotics.
** The public relations area of study includes certificates in professional writing and graphic communication.
† The technical communication area of study includes certificates in basic technical communication and advanced technical communication.
‡ The management development diploma includes options in general management, human resources administration, and marketing.

Through the Center for Multidisciplinary Studies, 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 this degree program values student's ideas and provides a multidisciplinary approach to learning that can be applied to the professional environment.

Like the center itself, students participating in the multidisciplinary studies program are anything but typical. Some are adults with families and careers attending classes online or at night, while others are full-time undergraduate students with nontraditional ideas about what they want in a college degree.

Admission requirements

For information on undergraduate admission, including freshman and transfer admission guidelines, please refer to the Undergraduate Admission section of this bulletin.

Enrollment policies: The center 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 advisers are available throughout the year to answer 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 CMS office or by visiting the center's website.

Students matriculated in the center's baccalaureate degree program are expected to complete the degree within seven years.

Assessment of prior learning and credit by experience

Students with substantial work experience in a specific field may receive academic credit for their life experience. Their adviser will assist them in identifying and preparing the appropriate documentation to prove that their experience is at least equivalent to the breadth and depth of a college-level course. These materials, presented as portfolios of prior learning experience, are reviewed by faculty members within the center. There is a $150 fee per quarter credit hour for any credit awarded through the assessment.

Military experience

Students who have previously served in the armed forces and participated in any number of training programs may be eligible to receive credit for their responsibilities through the American

Council of Education (ACE). Students should contact Veterans Enrollment Services at (585) 475-6641 or mskecr@rit.edu for an evaluation and recommendation of college credit for their military experience. RIT also is an institutional member of the Servicemembers Opportunity Colleges (SOC), which is a consortium of more than 1,500 colleges and universities that provide educational opportunities for service members and their families. SOC is funded by the Department of Defense and managed by the Defense Activity for Non-Traditional Education Support (DANTES).

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.

Faculty

Full- and part-time faculty members use their extensive industry experiences to guide their classroom instruction. Our faculty are selected for their professional competence, academic background, and teaching ability.

Cooperative education

While cooperative education and/or an internship experience are not required for the BS in applied arts and science degree, they are encouraged. Cooperative education gives students the opportunity to apply classroom-based knowledge to real world situations, where they gain experience working on and solving problems in industry.

Advising

The center's faculty and academic advisers are experienced and trained across academic disciplines. They help match educational and career goals with an appropriate program of study. With an adviser's help, each program begins by taking into account what the student already knows and has accomplished. For example, college credits earned at RIT or other accredited institutions are reviewed to see how they might be applied to the program of study; professional certifications and experiences are evaluated for the possibility of receiving credit; and credits may be earned (by examination, portfolio reviews, or other documentation) for college-level learning that was gained on the job or through other educational experiences.

Academic enrichment

Honors Program: Students who demonstrate a high level of achievement at the high school level may be invited to join the Honors program. These students will participate in Honors course work throughout their program of study and experiential learning activities under the guidance of a faculty mentor. Honors students will be selected during the admissions process.

Study Abroad: RIT encourages all students to consider a study abroad program. Students may study full time at a variety of host schools and are able to select both courses in their majors and/or liberal arts classes. The Study Abroad Office has information about foreign study options and opportunities.

Minors: RIT offers students more than 95 minors to choose from to enhance their academic program or further develop a personal area of interest. For a detailed list of minors, including courses, please refer to the Minors section of this bulletin.

Special opportunities

Graduate study: CMS offers a customizable graduate degree in professional studies. Please refer to the *Graduate Bulletin* or the college's website for more information.

Online learning: The center offers a variety of courses through online learning. Students have the option of completing certificates, diplomas, and AAS and BS degrees online. This option allows students flexibility in completing their courses while maintaining a class atmosphere through online discussions via chat/e-mail conferencing. Online learning courses use textbook readings, assignments, and exams to deliver course work. Students have access to instructors by e-mail, computer, telephone, or individual appointments.

Applied Arts and Science, BS

www.rit.edu/cms

Center for Multidisciplinary Studies
(585) 475-2234, cms@rit.edu

Program overview

The Center for Multidisciplinary Studies offers students the opportunity to create individualized undergraduate programs of technical and professional study through its applied arts and science program. In this program, students work closely with faculty and advisers to design unique, multidisciplinary plans of study that combine several areas of professional knowledge.

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.

Curriculum

The applied arts and science program is available as a bachelor of science program, an associate of applied science program, or as a diploma.

Bachelor of science (BS) degree: 180 credit hours total; 90 core credits in general education plus 90 credits in two to four areas of concentration

Associate of applied science (AAS) degree: 90 credit hours total; 52 core credits in general education plus 38 credits in one to two areas of concentration

Diploma: 36 credit hours; one area of concentration

Diploma, AAS, and BS degrees are available to full-time day students, part-time evening students, and online students. These degrees allow students to pursue several different professional and technical areas of study, selected specifically to meet individual career and personal goals.

For their professional concentrations, students may draw upon a wealth of educational resources from across RIT's colleges and departments. Examples of professional concentrations include:

Business/management focus
- Management
- Quality management
- Health systems administration
- Project management
- International logistics and transportation

Computer/technical focus
- Applied computing
- Technical communications
- Computer science studies
- Engineering technology studies
- Telecommunications
- Computer graphics
- Geographic information systems
- Mechanical technology

Liberal arts focus
- History
- Psychology studies
- Creative writing
- Cultural studies
- Foreign language

Students looking to complete the BS, AAS, or diploma online can choose from the following areas of professional concentration:
- Management
- Organizational change and leadership
- Health systems administration
- International logistics and transportation
- Computer graphics
- Project management
- Quality management
- Technical communications

No two applied arts and science programs will be exactly alike because each takes into account the student's previous learning and brings together a special combination of courses that are right for each student's career and professional development. For example, one individualized program might lead to a bachelor's degree with concentrations in information technology, graphic arts, and management, while another could lead to a bachelor's degree that combines the fields of technical communication and health systems administration.

As career plans evolve and the demands of their technical and professional fields change, students meet regularly with advisers to review and update plans of study.

Applied Arts and Science, AAS

http://www.rit.edu/cms

Program overview

The applied arts and science program offers students the opportunity to create individualized undergraduate programs of technical and professional 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 science BS program.

Applied Arts and Science, Diploma

The applied arts and science program offers students the opportunity to create individualized undergraduate programs of technical and professional 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 science BS program.

Business Administration, AAS

Program overview

The associate degree in business administration includes core courses in organization and management, accounting, management, and business law. Approximately half of the credits in the program are earned through these professional courses. In addition, the program includes a broad spectrum of courses in communication, behavioral/social sciences, humanities, math, and science. Students must achieve a minimum GPA of 2.0 in order to be certified. The AAS degree in business administration is fully transferable into the bachelor of science degree in applied arts and science.

Curriculum

Business administration, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
	History or Fine Arts Elective	4
3080-315	Legal Environment of Business	4
	Business Electives	12
Total Quarter Credit Hours		**20**

Computer Graphics, Cert.

Program overview

Today's graphic communicators rely on computers for nearly every step of the creative process. This certificate's courses develop and enhance the computer graphic skills of students who find that their job responsibilities have broadened to include aspects of graphic design. The program will benefit technical communicators, administrators, public relations practitioners, educators, sales and marketing staff, and technical and business professionals who are called upon to design and produce effective brochures, advertising materials, presentations, proposals, flyers, and other communication products. In addition, this program provides an excellent transition path for practicing graphic designers who need to upgrade their skills and move into the arena of computer design.

Students develop skills in the use of a number of popular graphic design, illustration, presentation, photo manipulation, and Internet software programs. They learn to combine typography, images, and graphic elements into striking designs for both printed and online use and can develop a portfolio of professional-quality work.

Curriculum

Certificate in computer graphics

COURSE		QTR. CR. HRS.
3088-271	Basic Computer Graphics	2
3088-371	Designing with Computers I	3
3088-372	Designing with Computers II	3
3088-373	Electronic Presentation Design	3
3088-381	Photographic Imaging with Computers I	3
3088-382	Photographic Imaging with Computers II	3
3088-383	Introduction to Internet Design	3
Total Quarter Credit Hours		**20**

A number of elective courses are available and may be substituted with the permission of the program chair. Examples include:
- 3088-428 Vector Illustration
- 3088-398 Effective Web Design I, II
- 3088-426 Designing for Print and Web
- 3088-398 Layout Design for Print
- 3088-398 Designing Web Graphics

Students not interested in taking an entire certificate program may take individual courses for which they have the proper prerequisites. Students must achieve a program GPA of at least 2.0 in order to be certified for completion or graduation.

Human Resource Administration, AAS

http://www.rit.edu/academicaffairs/cms/undergrad/associate.html

Center for Multidisciplinary Studies
(585) 475-2234, cms@rit.edu.

Program overview

The center offers an associate degree in human resources administration. The degree program includes a core group of business courses in organization and management, accounting, management, and business law. Approximately half of the credits in the degree program are earned through these professional courses. In addition, the program includes a broad spectrum of courses in communication, behavioral/social sciences, humanities, math, and science. Students must achieve a minimum GPA of 2.0 in order to be certified. The AAS degree in human resources administration is fully transferable into the bachelor of science degree in applied arts and science.

Curriculum

Human resource administration, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
0619-480	Human Resource Administration	4
0626-234	Interviewing Techniques	4
Choose one of the following:		
3080-311	Business Law I	4
3080-315	Legal Environment of Business	4
	Business Electives	8
Total Quarter Credit Hours		**20**

Human Resource Development, Cert.

Program overview

The human resource development certificate blends the traditional human resource elements of interviewing, compensation, and benefits with the essentials of the organization as a whole—corporate culture dynamics and the challenges of learning how to create a collaborative learning environment for employees. From navigating employees through complex retirement packages to affirming that workers can expect personal attention if questions arise, these skills are used by the human resource department and all management-bound professionals.

Curriculum

Certificate in human resource development

COURSE		QTR. CR. HRS.
3097-442	The Learning Organization	4
3097-431	Understanding Corporate Culture	4
0626-234	Interviewing Techniques	4
0619-480	Human Resource Management	4
0626-390	Compensation and Benefits	4
Total Quarter Credit Hours		**20**

International Logistics and Transportation, Cert.

Program overview

Logistics deals with managing the flow of goods from an organization's suppliers through its facilities and on to its customers. Successful logistics requires knowledge of such diverse fields as transportation, inventory management, warehousing, procurement and order processing, materials handling, packaging, supply chain management, product support, fulfillment, and customer service. Logistics also involves planning the arrival of raw materials, pre-manufactured assemblies, labor, and other resources at a manufacturing or assembly point; the warehousing and dispatch of products for sale; and the deployment of training, spare parts, support equipment, documentation, maintenance, and upgrades for equipment that is in the field. Independent third-party logistics suppliers have emerged to create a new and important service sector in the last decade.

Courses in this certificate program are offered through an online learning format only.

Curriculum

Certificate in international logistics and transportation

COURSE		QTR. CR. HRS.
3081-451	Introduction to Logistics and Transportation	4
3081-525	Strategic Logistics Management	4
3081-526	Logistic Law and Economics	4
Total Quarter Credit Hours		**12**

Management Development Diplomas

Program overview

The management development program has two components, the management certificate and the management diploma. The program is structured to first provide a broad foundation in applied general management and then tailor that foundation with focused study in a specialized field.

Students may take one or both parts of the program, and both may be completed in one academic year. Credits earned in the program can be applied to various degree programs. Students must achieve a minimum GPA of 2.0 in order to be certified for completion/graduation.

Curriculum

Students in the management diploma program concentrate their studies in one of three areas: general management, marketing, human resource administration. The diploma is earned by completing 16 quarter credit hours in addition to the management certificate.

Courses applied toward a management diploma also may be counted as professional courses in appropriate degree programs. Students must achieve a minimum GPA of 2.0 in order to be certified for completion/graduation.

Diploma in general management

COURSE		QTR. CR. HRS.
3081-200, 201, 202	Management Process (or approved alternative)	12
3080-201	Financial Accounting	4
3080-203	Managerial Accounting	4
	Business Elective	4
3081-361	Marketing	4
Total Quarter Credit Hours		**28**

Diploma in marketing

COURSE		QTR. CR. HRS.
3081-200, 201, 202	Management Process (or approved alternative)	12
3081-361	Marketing	4
3081-261	Effective Selling	4
3081-263	Advertising Principles	4
	Business Elective	4
Total Quarter Credit Hours		**28**

Diploma in human resource administration

COURSE		QTR. CR. HRS.
3081-200, 201, 202	Management Process (or approved alternative)	12
0619-480	Human Resource Management	4
0626-234	Interviewing Techniques	4
3080-311	Business Law I	4
	Business Elective	4
Total Quarter Credit Hours		**28**

Management Development, Cert.

Program overview

The management development certificate focuses on practical applications of management theory; management problems, solutions, and ideas; and personal development as an effective manager. In this program students associate with others who have similar career aspirations, job responsibilities, and challenging problems on the job. Through case studies, role play, simulations, and other instructional methods, students learn effective supervisory and management practices. Students must achieve a minimum GPA of 2.0 in order to be certified for completion/graduation.

Curriculum

The certificate's three courses offer a comprehensive, integrated study of supervisory management with topics that cover effective motivation, decision making, team building, conflict resolution, problem solving, time and stress management, communication techniques and strategies, planning, organizing, staffing, performance appraisal, and leadership.

Certificate in management development

COURSE		QTR. CR. HRS.
3081-200	Management Process I	4
3081-201	Management Process II	4
3081-202	Management Process III	4
Total Quarter Credit Hours		**12**

Manufacturing Technology Certificates

Program overview

The manufacturing technology area of study has four certificates for students to choose from:
- computer-aided drafting,
- fundamentals of manufacturing management,
- manufacturing processes, and
- robotics.

Curriculum

Certificate in computer-aided drafting*

COURSE		QTR. CR. HRS.
0608-211	Engineering Graphics with CAD	4
0614-262	Solid Modeling and Design (solid works)	4
0610-220	Design, Dimensioning, and Tolerance (solid works)	4
0617-460	Computer-Aided Design (Unigraphics)	4
Total Quarter Credit Hours		**16**

*Prerequisite: Computer Literacy

Certificate in fundamentals of manufacturing management*

COURSE		QTR. CR. HRS.
0617-436	Engineering Economics†	4
0617-440	Production and Operations Management I†	4
0617-441	Production and Operations Management II†	4
Total Quarter Credit Hours		**12**

* Prerequisites: College Algebra, Statistics, Computer Literacy
† These courses are available online.

Certificate in manufacturing processes*

COURSE		QTR. CR. HRS.
0617-220	Manufacturing Processes I	4
0617-420	Manufacturing Processes II	4
0617-471	Computer Numerical Control	4
Total Quarter Credit Hours		**12**

* Prerequisites: Engineering Drawing, Computer Literacy

Certificate in robotics

COURSE		QTR. CR. HRS.
0618-231	Technical Programming I	4
0617-470	Controls for Manufacturing Automation	4
0617-485	Robots in Manufacturing	4
Total Quarter Credit Hours		**12**

Organizational Change and Leadership, Cert.

Program overview

The organizational change and leadership certificate helps students understand corporate culture and develop the skills needed to manage organizational and individual change. Courses cover topics in leadership, corporate culture, change management, organizational behavior, and teams.

Curriculum

Certificate in organizational change

COURSE		QTR. CR. HRS.
3097-430	Survey of Organizational Change	4
3097-432	Managing Organizational Change	4
3097-431	Understanding Corporate Culture	4
3097-435	Global Forces and Trends	4
3097-434	Change and Leadership Project	4
	Elective	4
Total Quarter Credit Hours		**24**

Public Relations Certificate

Program overview

Public relations is vital to virtually every business endeavor. Almost every organization employs individuals, either in-house or through public relations agencies, who can prepare press releases, brochures, newsletters, annual reports, point-of-purchase promotions, and other persuasive, informative materials in a variety of media formats. This program is offered online only.

Curriculum

The public relations area of study covers two key areas: graphic communication and professional writing. A set of core courses provides an introduction to public relations and teaches widely used principles and techniques of advertising, project management, and persuasion.

The graphic communication certificate (designed for non-artists) focuses on the components of the advertising process, the use of effective design principles in the preparation of layouts, and the combination of creative and technical skills to achieve design success.

The professional writing certificate provides specialized instruction in writing marketing materials, inbound and outbound publications, corporate-level communications, speeches, and scripts.

The certificates are for individuals who wish to enter the field of public relations or take on similar responsibilities, those who have been working in a particular aspect of public relations and wish to upgrade or broaden their skills, or those who have been performing public relations tasks for which they have had little formal preparation.

The prerequisite for the core courses is demonstration (by examination, portfolio, or transcript) of a command of standard written English.

The certificates may be completed in four quarters of part-time study. Students may earn one or both certificates. Students may also take individual courses.

Certificate in public relations-graphic communication

COURSE		QTR. CR. HRS.
Core Courses:		
3088-350	Introduction to Public Relations	2
3088-356	Strategic Communications	2
3081-264	Advertising Evaluation and Techniques	4
3088-348	Managing the Project	2
3088-355	Coordinating Publication Production	2
Electives–Choose three of the following courses:		9
3088-371	Designing with Computers I	
3088-372	Designing with Computers II	
3088-373	Electronic Presentation Design	
3088-381	Photographic Imaging with Computers I	
3088-382	Photographic Imaging with Computers II	
3088-383	Introduction to Internet Design	
3088-374	Designing with Corel	
3088-384	Designing with QuarkXPress	
Total Quarter Credit Hours		**21**

* With adviser's approval

Certificate in public relations-professional writing

COURSE		QTR. CR. HRS.
Core Courses:		
3088-350	Introduction to Public Relations	2
3088-356	Strategic Communications	2
3081-264	Advertising Evaluation and Techniques	4
3088-348	Managing the Project	2
3088-352	Writing for the Organization	2
3088-357	Media Relations	2
3088-347	Promotional Writing	2
3088-353	Scripting and Audio Video Presentations	2
3088-354	Speechwriting	2
Total Quarter Credit Hours		**20**

Quality Management, Cert.

Program overview

Poor quality in manufacturing and service can cost companies as much as 20 percent of revenue in rework, scrap, brand switching, and loss of goodwill.

The center's management-oriented certificate program focuses on quality as a priority. Developed in cooperation with industry, the courses can help students develop a total quality management environment to combine the theory and practice of statistical quality control with leadership, teamwork, and problem-solving concepts and skills. This program is offered online only.

Curriculum

The certificate in quality management teaches the nuts and bolts of a quality organization, prepares students to introduce quality concepts to their organization, and teaches how to put quality principles to work. Overall, the certificate can prepare students to work as quality trainers, facilitators, team leaders, or managers at various levels of an organization.

Certificate in quality management

COURSE		QTR. CR. HRS.
3084-310	Introduction to Quality	4
3084-340	Quality Data Analysis	4
3084-410	Introduction to Lean Six Sigma	4
Choose one of the following courses:		4
3084-420	Statistical Quality Tools	
3084-430	Management for Quality	
Total Quarter Credit Hours		**16**

Small Business Management, Cert.

Program overview

The certificate program in small business management is designed for enterprising individuals who want to launch a new venture or improve an existing small business. It is especially appropriate for entrepreneurs, members of family-owned businesses, and key employees in companies with sales under $2 million.

Curriculum

The program's three courses are tightly integrated to provide a solid foundation in managing, marketing, and financing small businesses. The faculty includes academically qualified entrepreneurs who have managed their own small companies. This program is offered online only.

Certificate in small business management

COURSE		QTR. CR. HRS.
3081-221	New Venture Development	4
3081-222	Small Business Management and Finance	4
3081-223	Small Business Marketing and Planning	4
Total Quarter Credit Hours		**12**

Technical Communication Certificates

Program overview

In this age of rapidly expanding technologies, technical communication is an essential, challenging, and rewarding profession, one that can be practiced within an organization or outside through independent contracting.

As uses of technology expand, so does the need for communicators skilled in conveying many kinds of information, in many forms, to diverse audiences. Industrial, business, scientific, medical, and nonprofit sectors have recognized the importance of communication to their success. The ability to present information effectively—in forms such as manuals, brochures, data sheets, promotional materials, systems documentation, reports, trade and professional journals, websites, and videos—is a highly valued asset in today's workplace.

Curriculum

This area of study offers advanced and basic certificates in technical communication and provides a strong, practical foundation in technical communication skills. The certificates may be completed in three quarters and may also be taken simultaneously. Both certificate programs are taught online only.

Certificate in advanced technical communication

COURSE		QTR. CR. HRS.
3088-544	Writing in the Sciences	4
3088-477	Managing Media Presentations	4
3088-475	Writing Software User Documentation	4
Total Quarter Credit Hours		**12**

Technical Information Design (3088-510), Technical Proposals (3088-514), Technical Procedures (3088-512), and Document Usability (3088-511) may be substituted for one of the required advanced courses with permission of the program chair. In addition, various special topics courses (3088-398) offered in areas such as technical journalism, usability, and communications management may be substituted for one of the required courses with permission of the program chair. A course used as a substitute may not be used to fulfill the requirements of the certificate in basic technical communication. Students must achieve a minimum GPA of 2.0 to be certified for completion or graduation.

Certificate in basic technical communication

COURSE		QTR. CR. HRS.
3088-333	Technical Writing and Editing	4
3088-363	Technical Document Design	4
Choose one of the following courses:		4
3088-361	Research Techniques	
3088-476	Instructional Design Principles	
Total Quarter Credit Hours		**12**

Prerequisites include a command of standard written English as demonstrated by examination, portfolio, or transcripts.

Center for Multidisciplinary Studies

James Myers, BS, MS, Rochester Institute of Technology; Ph.D., University of Michigan—Director; Professor

Mary Boyd, BA, Earlham College; MS, University of Iowa—Associate Director; Associate Professor

Thomas Hanney, Certificate, Rochester Institute of Technology; BA, St. John Fisher College; MPA, State University College at Brockport—Lecturer

Guy Johnson, BS, Pennsylvania State University; MS, Syracuse University—Professor

Samuel McQuade III, BA, Western Washington University; MPA, University of Washington; Ph.D., George Mason University—Graduate Program Coordinator; Professor

Richard Morales, BA, Michigan State University; MS, State University College at Brockport; MS, Ph.D., Syracuse University—Faculty Emeritus

Thomas F. Moran, BSME, California State Polytechnic College; MSME, California State College at Long Beach—Associate Professor

Carol Romanowski, BA, State University College at Plattsburgh; BS, MS, Ph.D., State University of New York at Buffalo—Associate Professor

National Technical Institute for the Deaf

Gerald Buckley, President, NTID; Vice President and Dean, RIT

www.ntid.rit.edu/

Programs of Study

The National Technical Institute for the Deaf (NTID) provides deaf and hard-of-hearing students with educational programs that lead to meaningful employment in business, industry, government, and education. NTID represents the world's first effort to educate large numbers of deaf and hard-of-hearing students within a college campus planned principally for hearing students. NTID's location benefits deaf and hearing students' academic, personal, social, and communication development. More than 1,300 deaf and hard-of-hearing students from across the United States, as well as from several U.S. territories and other countries, study and reside at RIT.

NTID provides deaf and hard-of-hearing students with technical and pre-professional training in more than 20 programs. An NTID education prepares students for technical careers in areas such as accounting technology, administrative support technology, applied computer technology, applied liberal arts, applied mechanical technology, arts and imaging studies, business, business technology, computer-aided drafting technology, computer-integrated machining technology, hospitality and service management, and laboratory science technology. NTID also offers a degree program in American Sign Language-English interpretation. Over the past five years, 93 percent of NTID graduates who chose to enter the workforce have found employment.

Deaf and hard-of-hearing students who take courses or matriculate into one of RIT's other colleges may request educational access services, which typically include sign language interpreting services, FM systems, notetaking, or real-time captioning services. Alternative services are provided as required. Students also may request educational support services such as tutoring, personal and career counseling, and academic advising.

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.

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.

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 hospitality and service management provide seamless transition to baccalaureate programs in the B. Thomas Golisano College of Computing and Information Sciences, the College of Liberal Arts, the E. Philip Saunders College of Business, and the College of Applied Science and Technology, respectively. In addition, several of our associate in applied science (AAS) degree programs, such as administrative support technology, applied mechanical technology, and laboratory science technology, 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: accounting technology, administrative support technology, applied computer technology, arts and imaging studies, business technology, computer-aided drafting technology, computer-integrated machining technology, and laboratory science 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 degree in applied science and the associate degree in occupational studies. All career-focused programs require at least one 10-week cooperative education experience.

General education: NTID offers an array of general education courses to a broad-based population of NTID students, including those who are undecided about, or under-prepared for, matriculation into a program. In addition, NTID offers a degree program in American Sign Language-English interpretation and provides a comprehensive sign language education program for students, faculty, and staff members.

Support and access services: NTID provides comprehensive services in support of students enrolled in more than 200 baccalaureate or graduate programs in RIT's other colleges. The educational support services available include academic advising, faculty tutoring, audiological assistance, speech-language services, and personal and career counseling. In addition, NTID provides access services that are based upon each student's educational need and typically include sign language interpreting services, FM systems, notetaking, or real-time captioning services. Alternative services also will be provided as required. Through support and access services, students who are deaf are able to participate in all aspects of the RIT community.

Educational opportunities through NTID

Associate+Bachelor's degree programs
Associate+Bachelor's programs offered through NTID prepare qualified students to seamlessly enroll in baccalaureate degree programs in other colleges of RIT.

Associate in science degree (AS): Certification at this level requires the completion of 45–50 quarter credit hours of technical course work and 40–45 quarter credit hours in general education courses offered through the College of Liberal Arts, mathematics and science courses offered through the College of Science, and other courses as appropriate to the degree. This degree prepares students to enter and complete a bachelor's program in the B. Thomas Golisano College of Computing and Information Sciences, the College of Liberal Arts, the E. Philip Saunders College of Business, or the College of Applied Science and

Technology. Admission to these programs is available in the fall quarter only.

Pre-baccalaureate studies: The pre-baccalaureate studies program is 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 arts and imaging studies, liberal studies, science and mathematics, and engineering studies departments. The pre-baccalaureate studies career exploration option is available to students who are undecided as to their program of study.

The pre-baccalaureate studies program is 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 57–69 quarter credit hours of technical instruction. In addition to satisfactorily completing technical courses, students must complete 20 quarter credit hours in general education courses offered through the College of Liberal Arts as well as other required quarter credit hours as 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 57–69 quarter credit hours of technical instruction. In addition to satisfactorily completing technical courses, students must complete a specific number of quarter credit hours in the NTID general education curriculum, as 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.

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; decision-making classes; 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, social and physical sciences, the humanities, and deaf cultural studies/American Sign Language (ASL) as well as technical sampling courses or experiences. Some students also may take introductory courses in specific programs of study and general education courses and be involved in extracurricular or other college-oriented activities.

A career development counselor is assigned to help students evaluate the information and make career decisions. Students can remain in the career exploration studies program for one to three academic quarters. Additional quarters in the program are possible with the approval of the program director.

Educational opportunities in other RIT colleges

In addition to NTID's programs, qualified deaf and hard-of-hearing students may enroll as baccalaureate or master's degree students in one of the more than 200 professional programs offered through RIT's other colleges and institutes: College of Applied Science and Technology, E. Philip Saunders College of Business, B. Thomas Golisano College of Computing and Information Sciences, Kate Gleason College of Engineering, College of Health Sciences and Technology, College of Imaging Arts and Sciences, College of Liberal Arts, Center for Multidisciplinary Studies, 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.

Each of RIT's colleges has NTID instructional/support faculty that provide services for deaf and hard-of-hearing students. These services include tutoring, advising, and personal and career counseling. The department of access services provides sign language interpreting services, FM systems, notetaking, and real-time captioning services for deaf and hard-of-hearing students taking courses in the other eight colleges of RIT and for campus activities outside the classroom. Alternative services also will be provided as required.

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 (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 eight 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.

CAREER-FOCUSED AND ASSOCIATE+BACHELOR'S DEGREE PROGRAMS OF NTID		RELATED EDUCATIONAL PROGRAMS OF OTHER RIT COLLEGES		
Leading to associate degrees		Leading to associate, bachelor's, or master's degrees in the other RIT colleges; students may request educational access services such as sign language interpreting services, FM systems, notetaking, or real-time captioning services. Alternative services also will be provided as required.		

NTID PROGRAMS	OTHER RIT COLLEGES	OTHER RIT PROGRAMS		
Applied Computer Technology Concentrations: • PC Technical Support • Networking and Cyber Security AS Program	College of Computing and Information Sciences	• Computer Science • Information Technology • Networking Security and System Administration • Information Security and Forensics	• Game Design Development	• Medical Informatics • Software Engineering
Applied Mechanical Technology	College of Applied Science and Technology	• Mechanical Engineering Technology	• Manufacturing Engineering Technology	
Applied Liberal Arts	College of Liberal Arts	• Advertising and Public Relations • Criminal Justice • Economics • Journalism	• Museum Studies • Philosophy • Political Science • Professional and Technical Communication	• Psychology • Public Policy • Urban and Community Studies
Arts and Imaging Studies Concentrations: • Graphic Design • Graphic Technology	College of Imaging Arts and Sciences	**School for American Crafts** • Ceramics/Ceramic Sculpture • Glass • Metalcrafts and Jewelry • Woodworking and Furniture Design **School of Art** • Fine Arts Illustration • Medical Illustration	**School of Design** • 3D Digital Graphics • Graphic Design • Industrial Design • Interior Design • New Media Design and Imaging **School of Film and Animation** • Film and Animation • Motion Picture Science	**School of Photographic Arts and Sciences** • Advertising Photography • Biomedical Photographic Communication • Fine Arts Photography • Imaging and Photographic Technology • Photojournalism • Visual Media **School of Print Media** • Media Arts and Technology
Automation Technologies‡	College of Applied Science and Technology	**School of Engineering Technology** • Mechanical Engineering Technology	• Manufacturing Engineering Technology	• Electrical/Mechanical Engineering Technology
Business Studies Accounting Technology Business Business Technology Administrative Support Technology	College of Business, Center for Multidisciplinary Studies	• Accounting • Finance • International Business • Management	• Management Information Systems • Marketing • New Media Marketing • Human Resource Development	
Computer-Aided Drafting Technology	College of Applied Science and Technology	• Civil Engineering Technology		
	College of Imaging Arts and Sciences	• Interior Design		
Computer-Integrated Machining Technology Electives: • Machining • Precision Optics Manufacturing	College of Applied Science and Technology	• Manufacturing Engineering Technology		
Hospitality and Service Management Concentrations: • Hotel and Resort Management • Food Management	College of Applied Science and Technology	**School of International Hospitality and Service Innovation** • Hotel and Resort Management • Food Management		
Laboratory Science Technology	Center for Multidisciplinary Studies, College of Science	• Applied Arts and Science • Environmental Management and Technology	• Biology • Biotechnology	• Chemistry • Environmental Science

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.
‡ This program has been suspended. No new students will be admitted in 2011-2012.

First-Year Experiences Programming

NTID programs

Beginning with a summer 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 students qualified to enter NTID in the fall quarter are required to participate in a summer orientation program called the Summer Vestibule Program. This program includes:

- placement testing in English and mathematics
- orientation/transition to college life activities
- career sampling
- 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 with a counselor to select courses and activities that meet individual goals and needs. Components of first-year experiences programming include:

- enrollment in the Freshman Seminar course during the first quarter
- completion of preparatory courses, as needed
- work with an academic adviser and counselor
- 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

Other colleges of RIT

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 the summer orientation options and in RIT's My-Orientation program as well as NTID's support service orientation workshops
- enroll in the First-Year Enrichment program

- participate in opportunities to explore and select a major, if needed
- work with an academic adviser and counselor

NTID's General Education Curriculum

At NTID and in the other colleges of RIT, education in a chosen program of study and preparation for a career are complemented by study in general education. The NTID general education curriculum fosters a spirit of lifelong learning and inquiry. Courses in science, mathematics, English, the social sciences, the humanities, and deaf cultural studies/ASL are designed to provide students with the opportunity to develop knowledge, intellectual and communication skills, and an understanding of the creative process that will enable them to actively shape their personal, professional, and community lives.

The general education curriculum satisfies the general education distribution requirements for the AOS programs offered at NTID, prepares students for completing the College of Liberal Arts courses required for AAS and AS programs and, along with other curricula offered by NTID, prepares qualified students to pursue course work and degrees in other RIT colleges.

Degree requirements

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 the AS, AAS, and AOS degrees. (See the course sequences for individual programs of study.)

Level of courses in the curriculum

Degree requirements must be completed at the appropriate level in the curriculum. There are four levels of courses in the NTID general education curriculum: introductory (A), fundamental (B), intermediate (C), and bridging (D). Students not yet prepared for courses required for their degree begin with courses at a lower level and enter required courses when they have completed the prerequisites.

Course placement

The goal of assessment for course placement is to ensure that each student begins his or her study in the appropriate course. Assessment for initial course placement will be made during summer orientation in the following areas: mathematics, American Sign Language, and writing and reading.

General education distribution requirements

Degree	Freshman Seminar	Math and Science	Deaf Cultural Studies/ASL1	Language and Literature	Humanities	Social Sciences	Capstone
AS	2	6		Liberal Arts (CLA)-82	Liberal Arts (CLA)-8	Liberal Arts (CLA)-8	
AAS	2	6	3	Liberal Arts (CLA)-43	Liberal Arts (CLA)-8	Liberal Arts (CLA)-8	34
AOS	2	6	(3)1	12	65	65	34

1 The deaf cultural studies/ASL requirement can be satisfied by taking three credits in American Sign Language or an identified deaf cultural studies course. The 3-credit course taken to fulfill the deaf cultural studies/ASL requirement can fulfill three credits in either the humanities or social sciences, depending upon which discipline offers the course selected.
2 Students earning the AS degree are required to take Writing Seminar (0502-227) and one 4-credit Arts of Expression (0505-319) course.
3 Students earning the AAS degree are required to take Writing Seminar.
4 The capstone requirement can be satisfied by taking either Capstone: Society and Technology (0882-297) or Capstone: Explorations in Social Responsibility (0880-294). Students in AAS Associate+Bachelor's degree programs, only, may take Science, Technology, and Values (0508-211) as a substitute, providing they take two additional courses to satisfy the College of Liberal Arts humanities requirement.
5 Students earning AOS degrees are required to complete one C-level course in communication studies (Group Dynamics and Effective Teams, Interpersonal Relationships, or Organizational Communication and the Deaf Employee). These credits may be used to satisfy the humanities or social sciences requirements.

Course requirements

Freshman Seminar: Freshman Seminar is required for all students entering the first year of college. This course helps students identify personal, social, and academic skills that lead to a successful college experience.

Science and mathematics: All students take science and mathematics courses that foster the reasoning and problem-solving skills that are a part of the foundation of their technical studies. In addition, the curriculum provides an opportunity to develop the mathematical and scientific literacy demanded in today's society.

Students are required to complete three credits in mathematics and three credits in science at the fundamental (B) level or higher. Some students will have additional requirements established by their technical programs. (See the course sequences for individual technical programs.)

English language: The English program is designed to enable students to develop English literacy skills. The program includes course sequences at four levels (A-D), which offer instruction in reading and writing. Courses at levels A-C of this program provide the English literacy skills needed for career-focused associate degrees. However, there are two course sequences at level C: Career English and Intensive English. Career English is designed for students completing the AOS degree. Intensive English is designed for students who demonstrate strong potential for improving their skills sufficiently to access the College of Liberal Arts' writing curriculum required for the AAS and AS degrees. A grade of C is required at the completion of each Intensive English course in order to progress through the sequence, and each Intensive English course must be taken in conjunction with its co-requisite course. At no time may an Intensive English course be repeated. Level D courses prepare students to access the College of Liberal Arts' writing curriculum required for Associate+Bachelor's degree programs and baccalaureate programs.

Students who plan to graduate with the AOS degree are required to complete 12 credits of English at level C or higher. 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.

Social sciences and humanities: The social sciences courses provide students with a broad exposure to key concepts and issues in anthropology, sociology, psychology, economics, and political science.

The humanities curriculum includes courses in communication studies, history, fine arts, performing arts, and philosophy. Students also have the opportunity to study foreign languages in the College of Liberal Arts. The communication studies curriculum offers courses to enhance students' understanding of the communication process and develop effective individual, group, professional, and cross-cultural communication skills based on linguistic background, communication preferences, and needs of a variety of audiences.

The performing arts curriculum includes performance and technical components. The curriculum makes use of NTID's Panara Theatre and a smaller experimental theater where students stage plays and performances and create their own works in American Sign Language and English. This curriculum provides a bridge to the BFA program in film/video/animation in the College of Imaging Arts and Sciences.

Each of the social sciences and humanities curricula have courses at three levels (B-D). Students who plan to graduate with

the AOS degree are required to complete six credits of social sciences courses and six credits of humanities courses at level C or higher. Students who, upon entry to NTID, place below level C in the social sciences/humanities will need to successfully complete courses at level B before taking courses at level C.

Deaf cultural studies/American Sign Language

Students have an opportunity to study American Sign Language and learn about their heritage as deaf people through the deaf cultural studies/ASL curriculum. All students are required to complete one 3-credit course in deaf cultural studies or ASL at the fundamental (B) level or higher. Students who are not skilled in sign language are strongly encouraged to take additional ASL courses, and students proficient in ASL are encouraged to take advanced courses. Deaf cultural studies courses also satisfy the social sciences and humanities requirements.

Capstone

All students at the AAS and AOS levels are required to complete a capstone course. This is an interdisciplinary course that applies the knowledge and skills acquired in the technical and general education courses to a selected topic, resulting in a team project and presentation. The capstone requirement can be satisfied by taking either Capstone: Society and Technology (0882-297) or Capstone: Explorations in Social Responsibility (0880-294). Students in AAS Associate+Bachelor's degree programs, only, may take Science, Technology, and Values (0508-211) as a substitute providing they take two additional courses to satisfy the College of Liberal Arts humanities requirement.

College of Liberal Arts composition sequence

The College of Liberal Arts, through the NTID department of liberal studies, offers a two-course writing sequence, Written Communication I and II (0502-110, 111) as preparation for the College of Liberal Arts course Writing Seminar. These courses provide additional experience in writing, reading, and critical thinking techniques needed for success in Writing Seminar (0502-227). Eligible students must meet with the liberal arts instructional/support faculty before registering for these courses.

Liberal arts requirements

Deaf and hard-of-hearing students enrolled in baccalaureate, AS, or AAS degree programs take required liberal arts courses through the College of Liberal Arts. At the lower division, students can choose between course sections taught by either NTID or College of Liberal Arts faculty members.

Where liberal arts courses are taught by NTID faculty members, instructors communicate directly with students utilizing a variety of communication strategies that include sign language, spoken language, printed/visual aids, Web-based instructional materials, and individual tutoring. The faculty member is responsible for facilitating communication in the classroom.

Liberal arts courses taught by College of Liberal Arts faculty members 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 students. Alternative services also will be provided as required. Students also may request educational support services such as tutoring and academic advising.

Deaf and hard-of-hearing students are advised to earn a passing grade in the Writing Seminar course before taking any additional

liberal arts courses. Students studying in colleges other than NTID should consult with their program departments about required liberal arts courses.

Placement in Writing Seminar (0502-227) is based on the Liberal Arts Placement Test or upon satisfactory completion of Written Communication II (0502-111).

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-sponsored 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. The estimated cost for books and supplies for the 2011-12 academic year is $1,900.

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 quarter. 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 sickness insurance. Students may choose insurance coverage through RIT, or they may waive this coverage if they provide evidence of other insurance coverage. Waiver cards will be sent to all accepted students during the summer and will be available at registration. The fee for health insurance for 2011-12 is approximately $950.

Deaf and hard-of-hearing applicants

Deaf and hard-of-hearing students may apply for admission to any of RIT's colleges. All applicants with a hearing loss should check the appropriate box on the application and submit an audiological record completed by a certified audiologist (CCC-A) in order to qualify for educational access and support services as well as NTID's federally supported tuition rate. Send application materials to the NTID Office of Admissions. For further details regarding application requirements, please refer to the information in the Admission to Undergraduate Study section of this bulletin.

Transfer credit

Deaf and hard-of-hearing students may transfer into an NTID program, or they may qualify to enroll directly in a program in another RIT college with NTID sponsorship. The transfer credit of deaf students accepted to the Summer Vestibule Program will be evaluated in the fall, when they are accepted into a specific program.

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/TTY), 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.

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.

NATIONAL TECHNICAL INSTITUTE FOR THE DEAF FIXED CHARGES 2011-2012 (DOMESTIC STUDENTS)

	Summer Vestibule Program 8/20-9/4/11	NSSO* 8/31-9/4/11	Fall 9/5-11/19/11	Winter 11/28/11-3/3/12	Spring 3/12-5/25/12	Summer 6/4-8/18/12
Tuition	$671	0	$3,861	$3,861	$3,861	$3,861
Room	$416	0	$2,032	$2,032	$2,032	$2,032
Board (standard meal plan)	$210	0	$1,439	$1,439	$1,439	$1,439
Student fees†	0	0	$151	$151	$151	$151
Orientation fee‡			$200			
Student sickness insurance fee§			$950			
Total	**$1,297**	**0**	**$8,633**	**$7,483**	**$7,483**	**$7,483**

* NSSO (NTID Support Service Orientation) workshops for NTID-supported students accepted to other RIT colleges

† Student fees are required of all full-time students and include: student health fee ($75) and student activities fee ($76)

‡ Charge to defray cost of fall Orientation program for freshmen and new students only.

§ Student sickness insurance fee is estimated.

Notes: Required books and supplies will impact these figures.

The standard academic year includes the fall, winter, and spring quarters. New students accepted to the Summer Vestibule Program will be charged according to the prorated fee schedule indicated above.

Students on co-op are not charged tuition or fees for that particular quarter and will be charged room and board only if they live on campus while they work.

Incidental personal expenses for students average $50–60 a month. This accounts for such things as local transportation, laundry and dry cleaning, toiletries, entertainment, hearing aid batteries, etc.

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 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. Campus cable connections are provided in residence hall rooms, classrooms, and various other locations. The system supports 22 channels of basic service, which includes ABC, CBS, NBC, Fox, WB, PBS, a local news channel, a local public access channel, and several channels used on campus for distribution of educational programming. This basic service is free, although students may elect to purchase full cable service from the Rochester cable system provider.

A well-equipped television facility provides studio services to produce class and self-instruction media for use within the university.

Telecommunications

Deaf, hard-of-hearing, and speech-impaired students can access telephone services through TTY, 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 at NTID. Students have opportunities to develop skills through a wide range of curricular and co-curricular activities that promote communication success in educational, social, and work situations. The communication studies and services department, the department of American Sign Language and interpreting education, and the department of cultural and creative studies provide intensive support and instruction for the development of communication skills. Faculty and staff conduct assessments and provide course work, workshops, and individualized instruction. They also work collaboratively with instructional/support faculty and professional staff.

Hearing aid shop

The NTID Hearing Aid Shop provides the RIT community with services related to hearing loss, hearing aids, and cochlear im-

plants. Students may visit the shop to receive information about hearing loss and cochlear implants or to schedule clinical appointments, obtain new ear molds and batteries, have hearing aids repaired and other services. The shop is located in Johnson 3130 and can be contacted by calling (585) 475-6473 (voice/TTY).

NTID counseling and academic advising services

Every NTID-supported student is assigned a counselor in the NTID counseling and academic advising services department. Counselors provide individual, personal, social, and career counseling, and academic advising services to their students. In addition, counselors work closely with students and faculty in students' academic programs to help students achieve academic success. Counselors also consult and network extensively with families and internal and external resources with the goal of helping students achieve personal, career, and educational success. Students can contact their assigned counselors to arrange for appointments.

Career resource and testing center

The innovative Career Resource and Testing Center provides NTID students with useful educational, career, and assessment services. Print, video, and online sources of information allow students to learn about personal interests, values, and skills as well as suitable college and career options. Computerized guidance and assessment programs allow students to compare their personal characteristics with occupations. The center also supports our college's Career Decision Making course, which helps undecided students develop a personal career plan. The center is coordinated by a professional counselor from NTID Counseling and Academic Advising Services and is open weekdays and evenings. For additional information or an appointment, call (585) 475-6589 (videophone), (585) 475-6597 (v), or e-mail: dddnbu@rit.edu.

Mental health/psychological counseling

Mental health counseling services for deaf and hard-of-hearing students are part of a range of services at the RIT Counseling Center. Individual and group therapy are offered for psychological and adjustment issues such as depression, anxiety, family conflicts, relationships, college success, and identity issues, to name a few. Mental health emergency services and crisis intervention are provided by the RIT Counseling Center on a 24-hour basis in collaboration with other campus service providers. The Counseling Center also coordinates medication consultation and management, when appropriate, through the RIT psychiatrist.

Psychoeducational programs and workshops also are offered on a variety of topics, including body image, stress management, depression, and social skills.

Counseling Center staff provides consultation about mental health issues and deafness on campus, locally, nationally, and internationally.

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 prior-

ity for NTID. To help ensure that graduates obtain program-related employment, NTID's Center on Employment assigns each new student an adviser 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 courses, Job Search Process (0806-101) and Employment Seminar (0806-201).

The center's employment advisers are in constant contact with potential employers throughout the United States. In addition, the center hosts an annual job 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, 93 percent of NTID graduates who chose to enter the workforce have found employment.

Research

NTID is a nationally known center of research on deafness. Faculty and staff at NTID conduct research to understand how deaf and hard-of-hearing students learn, work, and live in society. The dual mission of the research program at NTID is to gather new information and to make this information available to students, parents, teachers, and other professionals. Students may become involved in this research by volunteering to participate in a research study, by becoming a research assistant, or by conducting their own research under the supervision of NTID faculty and staff members.

ASL-English Interpretation, BS

www.rit.edu/NTID/aslie

Kim Brown Kurz, Chairperson
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On-the-job responsibilities

The BS degree program in ASL-English interpretation 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.

Places of employment

Graduates will find work in a variety of settings, including elementary, secondary, and post-secondary educational institutions; community service organizations; hospitals or clinics; vocational rehabilitation agencies; business/industry; and government agencies.

Special entrance requirements

In addition to RIT's general admissions procedures, the ASL-English interpretation program requires applicants to complete admission materials from the NTID Admissions Office.

Academic preparation

Applicants are required to have at least a high school diploma or equivalent. High school preparation should include a college preparatory program with a minimum of four years of English (with a minimum of a B average), three years of science and mathematics, and two years of a foreign language.

The middle 50 percent of accepted NTID applicants possess SAT scores of 1530-1940. Equivalent ACT composite scores are 22-29. Both SAT and ACT tests may be submitted.

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.

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, please visit the section "Is Interpreting the Career for Me?" on our website.

ASL-English interpretation, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0875-201, 202, 203	American Sign Language I, II, III	12
1105-051, 052	First-Year Enrichment I, II	2
	Mathematics/Science†	12
	Liberal Arts*	20
	General Education Elective	4
Second Year		
0875-301, 302, 303	American Sign Language IV, V, VI	12
0875-213	Introduction to the Field of Interpreting	4
	Mathematics/Science†	8
	General Education Electives	12
	Liberal Arts*	4
0875-311	Processing Skills Development	4
0875-212	Deaf Culture and Community	4
	Wellness Education‡	0
Third Year		
0875-315, 325	English to ASL Interpreting I, II	8
0875-316, 326	ASL to English Interpreting I, II	8
	Liberal Arts Concentration	12
0875-320	Practical and Ethical Applications	4
0875-400	Interactive Interpreting	4
	General Education Electives	4
	Interpreting Electives	8
	Wellness Education‡	0
Fourth Year		
0875-501	English to ASL Interpreting III	4
0875-502	ASL to English Interpreting III	4
	Free Electives	12
0875-350, 510	Practicum and Seminar I, II	8
0875-520	Issues in Interpreting	4
	General Education Electives	6
Total Quarter Credit Hours		**184**

* Please see Liberal Arts General Education Requirements for more information.
† Please see the Mathematics and Science General Education Curriculum for more information.
‡ Please see Wellness Education Requirement for more information.

ASL-English Interpretation, AAS

www.rit.edu/NTID/aslie

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On-the-job responsibilities

The program in ASL-English interpretation prepares entry-level sign language interpreters for work in settings where deaf, hard-of-hearing, and hearing people interact and communicate. The degree allows students to develop foundation skills.

Places of employment

Graduates will find entry work in a variety of settings, including

elementary, secondary, and post-secondary educational institutions; community service organizations; vocational rehabilitation agencies; business/industry; and government agencies.

Admission requirements
In addition to RIT's general admissions procedures, the ASL-English interpretation program requires applicants to complete admission materials from the NTID Admissions Office.

Academic preparation
Direct entry to the associate degree option is available for students who demonstrate proficiency at the ASL III level (0875-203) and are ready to enter ASL IV (0875-301) (see course descriptions). It is strongly recommended that applicants possess a BS degree. (Note: By the year 2012, candidates for national interpreter certification must possess a baccalaureate degree.) 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.

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, please visit the section "Is Interpreting the Career for Me?" on our website.

ASL-English interpretation, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0875-301, 302, 303	American Sign Language IV, V, VI	12
0875-213	Introduction to the Field of Interpreting	4
0875-300	Intermediate Fingerspelling and Number Skills Development	4
0875-311	Processing Skills Development	4
0875-212	Deaf Culture and Community	4
	Liberal Arts*	20
	Mathematics/Science‡	8
1105-051, 052	First-Year Enrichment I, II	2
	Wellness Education†	0
Second Year		
0875-316, 326	ASL to English Interpreting I, II	8
0875-315, 325	English to ASL Interpreting I, II	8
0875-320	Practical and Ethical Applications	4
0875-400	Interactive Interpreting	4
	Interpreting Elective	4
	Liberal Arts*	4
0875-350	Practicum Seminar I	4
Total Quarter Credit Hours		**94**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Please see the Mathematics and Science General Education Curriculum for more information.

Accounting Technology, AAS

www.rit.edu/NTID/acctech

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The AAS degree in accounting technology prepares students for entry-level employment in accounting-related occupations.

Students learn the functions of the complete accounting cycle for service, merchandising, and manufacturing businesses.

On-the-job responsibilities
Graduates will use computers to maintain and reconcile various financial records, verify business records, and perform other clerical and administrative duties.

Places of employment
Graduates will find employment in a variety of settings, including business, industry, and government, as well as self-employment. Positions for which graduates qualify include junior accounting technician, cost accounting clerk, accounts receivable/payable clerk, payroll clerk, general accounting clerk, and microcomputer accounting clerk.

Prerequisites
English: Placement into the College of Liberal Arts' Writing Seminar (0502-227) course. Students typically enter Writing Seminar with reading scores equivalent to 10.0 on the California Reading Test. However, students who complete AAS degrees typically enter NTID with reading scores equivalent to 9.0 on the California Reading Test.

Mathematics: Mathematics Applications for Business Technology (0884-155) 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.

Accounting technology, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0801-201, 202	Accounting I, II	8
0804-101	Orientation to Business	3
0804-110	Business English	3
0804-111	Keyboarding	2
0804-112	OAS Formatting	3
0804-113	OAS Document Production I	4
0804-211	Records Management/Business Calculations	3
0804-212	Payroll/Spreadsheet Applications	3
0804-286	Fundamentals of Marketing	3
	Mathematics Requirement‡	7
0887-200	Freshman Seminar	2
	Deaf Cultural Studies/ASL*	3
0502-227	Writing Seminar	4
	Liberal Arts*	8
	Science (Level B)	3
	Wellness Education†	0
Second Year		
0801-203, 204	Accounting III, IV	8
0801-252, 253	Cost Accounting I, II	8
0804-221	OAS Document Production II	4
0804-284	Fundamentals of Management	3
	Liberal Arts*	4
0806-101	Job Search Process	2
0882-242	Law and Society	3
0801-299	Cooperative Education	Co-op
Third Year		
0511-211	Principles of Microeconomics	4
0801-260	Applied Accounting Techniques	2

COURSE		QTR. CR. HRS.
0806-201	Employment Seminar	1
	Liberal Arts*	4
	Capstone*	3
Total Quarter Credit Hours		**105**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Mathematics Applications for Business Technology (0884-155) and another mathematics elective at level B or higher are required.

Microsoft certification

The department operates an authorized testing center for Microsoft Office Specialist. Preparatory courses are offered for several exams each quarter.

Administrative Support Technology, AAS

www.rit.edu/NTID/ast

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The AAS program in administrative support technology 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, e-mail, and information processing skills for applications such as word processing, spreadsheet, presentation, and database; and perform other office duties.

The Associate+Bachelor's degree program provides students with the foundation needed for transfer into a bachelor's degree program. Students begin their studies in the associate of applied science program in administrative support technology. Upon successful completion of seven quarters of the AAS program, and with a minimum GPA of 2.5, students may enroll directly in the Center for Multidisciplinary Studies to pursue a bachelor's degree in applied arts and science. In this program, students may choose a concentration in human resource development. More information is available at www.rit.edu/NTID/astAplusB.

Places of employment

Graduates will find employment in a variety of settings, including business, industry, government, and education. Positions for which graduates qualify include administrative assistant, office assistant, word processor, and secretary.

Prerequisites

English: Placement into the College of Liberal Arts' Writing Seminar (0502-227) course. Students typically enter Writing Seminar with reading scores equivalent to 10.0 on the California Reading Test. However, students who complete AAS degrees typically enter NTID with reading scores equivalent to 9.0 on the California Reading Test.

   Mathematics: Mathematics Applications for Business Technology (0884-155) 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.

Administrative support technology, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0804-101	Orientation to Business	3
0804-110	Business English	3
0804-111	Keyboarding	2
0804-112	OAS Formatting	3
0804-113	OAS Document Production I	4
0804-221	OAS Document Production II	4
0804-211	Records Management/Business Calculations	3
0804-212	Payroll/Spreadsheet Applications	3
0804-286	Fundamentals of Marketing	3
	Mathematics Elective‡	3
0887-200	Freshman Seminar	2
0502-227	Writing Seminar	4
	Liberal Arts*	8
	Deaf Cultural Studies/ASL*	3
	Wellness Education†	0
Second Year		
0801-201, 202	Accounting I, II	8
0805-211	Web Development for Business	3
0804-230	Administrative Support Technology Seminar	3
0804-284	Fundamentals of Management	3
0804-302	Advanced Applications for Word Processing	4
0804-303	Business Graphics	4
0804-304	Database Applications for Business	4
	Liberal Arts*	4
0806-101	Job Search Process	2
0882-242	Law and Society	3
	Science (Level B)	3
0804-299	Cooperative Education	Co-op
Third Year		
0804-291	Applied Business Techniques	2
0804-310	Desktop Publishing Concepts and Applications	3
	Liberal Arts*	4
0806-201	Employment Seminar	1
	Capstone*	3
Total Quarter Credit Hours		**102**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Satisfied by Foundations of Algebra (0884-180) or Mathematics Applications for Business Technology (0884-155).

Microsoft certification

As an authorized testing center for Microsoft Office Specialist, preparatory courses are offered to prepare students for several exams each quarter.

Applied Computer Technology, AS

http://www.rit.edu/NTID/actAplusB

Elissa Olsen, Chairperson
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The associate of science 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 the B. Thomas Golisano College of Computing and Information Sciences. NTID's AS degree is a program specifi-

cally designed so that students can enroll directly in one of the following programs in the Golisano College: applied networking and system administration, information security and forensics, or information technology. Coordination between the two colleges maximizes the number of credits a student may apply toward the baccalaureate degree. Admission to this program is available for the fall quarter only.

Prerequisites

The following prerequisites are necessary for admission into the applied computer technology AS program:

ACT: composite test score of 18 or better

English: Placement into the College of Liberal Arts' Writing Seminar (0502-227) course; students who qualify for Written Communications II (0502-111) will be considered for admission.

Mathematics: Entrance into NTID's Elements of Trigonometry (0884-220) course

To transfer to the Golisano College, students must possess a GPA of 2.8 or higher upon graduating with the AS degree in applied computer technology.

Students in the applied computer technology program receive a foundation in computer hardware, networking, and computer applications.

Applied computer technology, AS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0805-224	Introduction to Networking and Security Awareness	3
0805-216, 217	PC Hardware I, II	6
0884-220	Elements of Trigonometry	4
0887-200	Freshman Seminar	2
0805-220	Introduction to UNIX	3
0884-275	Advanced Math	4
	Liberal Arts*	4
0502-227	Writing Seminar	4
0805-215	PC Operating Systems	3
0805-390	Programming Fundamentals	4
	Lab Science§	4
	Communications Elective‡	3-4
	Wellness Education†	0
Second Year		
	IT Programming sequence**	12
4002-320	Introduction to Multimedia	4
4002-351	Computer Networking Fundamentals	4
	Liberal Arts*	16
	Lab Science§	4
1016-205	Discrete Math	4
	General Education Elective	4
Total Quarter Credit Hours		**92-93**

* Please see General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Communications elective––options include a course in professional communication, technical writing, foreign language, public speaking, sign language, or another course relating to interpersonal communications (including Written Communication II). This course may be taken from the College of Liberal Arts or NTID.
§ Lab Science––Any NTID science courses numbered 200 or higher offered for 4 credits with an included lab component. These courses include: Human Genetics and Evolution (0885-281), Scientific Basis of Social Responsibility (0885-282), and Developmental Human Anatomy and Physiology (0885-283). Any two courses from the College of Science also can be used.
** Students must complete a three-quarter course sequence in programming from the IT department. Students must take 4002-217, 218, 219, or 4002-217, 220, 221. Appropriate course sequence will be determined after successful completion of 4002-217.

Applied Computer Technology, AAS

http://www.rit.edu/NTID/act
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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 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.

Program concentrations

Students will select a program concentration in the second year. Concentrations involve either computer technical support or networking and cyber security.

Computer technical support: This concentration develops skills specific to working with office professionals to solve computer-related problems. These skills prepare students to work at a help desk responding to a client's computer problems and performing setup, upgrades, and repairs to computers and computer peripherals.

Networking and cyber security: Students in this concentration develop skills specific to network and network security support. The skills include server setup, support and administration, network setup, troubleshooting and repair, identifying and implementing security policies, and installing appropriate hardware and software to support a secure and robust network.

On-the-job responsibilities

Students work as computer technicians, computer support specialists, network technicians, network security technicians, and network administrators.

Places of employment

Graduates can expect to work in a variety of environments, including banks, insurance companies, large stores, manufacturing companies, public utilities, government agencies, health care agencies, hospitals, and many other kinds of departments and businesses that use computers and networks.

Prerequisites

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 the College of Liberal Arts' Writing Seminar (0502-227) course. Students typically enter Writing Seminar with reading scores equivalent to 10.0 on the California Reading Test. However, students who complete AAS degrees typically enter NTID with reading scores equivalent to 9.0 on the California Reading Test.

Mathematics: Placement into Foundations of Algebra (0884-180) 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 program will have completed at least two years of high school science.

Applied computer technology, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0805-201	Applications Software	3
0805-216, 217	PC Hardware I, II	6
0805-215	PC Operating Systems	3
0805-224	Introduction to Networking and Security Awareness	3
0805-225	Networking Essentials	3
0805-226	Client/Server Networks	3
0805-251	Introduction to Web Development	3
0805-220	Introduction to Unix	3
0884-180	Foundations of Algebra	4
	Math Elective (Level B or above)	4
0887-200	Freshman Seminar	2
0502-227	Writing Seminar	4
	Deaf Cultural Studies/ASL*	3
	Wellness Education†	0
Second Year		
0805-230	Introduction to Programming	3
0805-351	Introduction to Mac	3
Choose one of the following:		3
0805-310	Microcomputer Database Software	
0805-325	Database Systems	
0806-101	Job Search Process	2
	Math Elective (Level B or above)	4
	Concentration Courses‡	12
	Technical Electives§	3
	Science (B Level or above)	3
	Liberal Arts*	12
0805-299	Cooperative Education	0
Third Year		
	Technical Electives§	3
0805-395	ACT Technical Capstone	3
0806-201	Employment Seminar	1
	Liberal Arts*	4
	Capstone*	3
Total Quarter Credit Hours		**103**

* Please see NTID's General Education Distribution Requirements chart for more information.

† Please see Wellness Education Requirement for more information.

‡ Concentration courses for computer technical support are: Help Desk Support (0805-332), Introduction to Computer Forensics (0805-353), Server Management and Security (0805-337), and Digital Technology Integration (0805-350). Concentration courses for networking and cyber security are: LAN/WAN Design (0805-335), Network Security (0805-336), Server Management and Security (0805-337), and Firewall and IDS (0805-338).

§ Students may select from applied computer technology electives or approved electives from other majors.

Applied Computer Technology, AOS

http://www.rit.edu/NTID/act

Elissa Olsen, Chairperson
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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 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.

Program concentrations

Students select a program concentration in the second year. Concentrations involve either computer technical support or networking cyber security.

Computer technical support: This concentration develops skills specific to working with office professionals to solve computer-related problems. These skills prepare students to work at a help desk responding to a client's computer problems and performing setup, upgrades, and repairs to computers and computer peripherals.

Networking and cyber security: Students in this concentration develop skills specific to network and network security support. The skills include server setup, support and administration, network setup, troubleshooting and repair, identifying and implementing security policies, and installing appropriate hardware and software to support a secure and robust network.

On-the-job responsibilities

Students work as computer technicians, computer support specialists, network technicians, network security technicians, and network administrators.

Places of employment

Graduates can expect to work in a variety of environments, including banks, insurance companies, large stores, manufacturing companies, public utilities, government agencies, health care agencies, hospitals, and many other kinds of departments and businesses that use computers and networks.

Prerequisites

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 English level C or above. Students successfully completing the AOS degree typically enter with reading scores equivalent to 8.0 on the California Reading Test.

Mathematics: Placement into Foundations of Algebra (0884-180) 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 program will have completed at least two years of high school science.

Applied computer technology, AOS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0805-201	Applications Software	3
0805-216, 217	PC Hardware I, II	6
0805-215	PC Operating Systems	3
0805-224	Introduction to Networking and Security Awareness	3
0805-225	Networking Essentials	3
0805-226	Client/Server Networks	3
0805-251	Introduction to Web Development	3
0805-220	Introduction to Unix	3
0884-180	Foundations of Algebra	4
0883-212, 213, 214	Career English I, II, III	12
0887-200	Freshman Seminar	2
	Wellness Education†	0
Second Year		
0805-230	Introduction to Programming	3

COURSE		QTR. CR. HRS.
0805-351	Introduction to Mac	3
Choose one of the following:		3
0805-310	Microcomputer Database Software	
0805-325	Database Systems	
0806-201	Job Search	2
	Concentration Courses‡	12
	Technical Elective§	3
	Science (B Level or above)	3
	Math Elective (Level B or above)	4
	Social Sciences*	3
	Humanities*	3
	Communications*	3
0805-299	Cooperative Education	Co-op
Third Year		
	Technical Electives§	3
0805-395	ACT Technical Capstone	3
0806-201	Employment Seminar	1
	Deaf Cultural Studies/ASL*	3
	Capstone*	3
Total Quarter Credit Hours		**100**

* Please see the NTID General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Concentration courses for computer technical support are Help Desk Support (0805-352), Introduction to Computer Forensics (0805-353), Server Management and Security (0805-337), and Digital Technology Integration (0805-350). Concentration courses for networking and cyber security are LAN/WAN Design (0805-335), Network Security (0805-336), Server Management and Security (0805-337), and Firewall and IDS (0805-338).
§ Students may select from applied computer technology electives or approved electives from other majors.

Applied Liberal Arts, AS

www.rit.edu/NTID/laAplusB

Kathryn Schmitz, Chairperson
(585) 475-6327 (V), (585) 475-6813 (TTY)

The associate in science 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 the College of Liberal Arts, which offers programs in advertising and public relations, criminal justice, economics, journalism, museum studies, philosophy, political science, professional and technical communication, psychology, public policy, and urban and community studies.

By the end of the first year, students choose a College of Liberal Arts program they wish to enroll in after completing the AS degree. During the second year, students take five professional courses in their chosen liberal arts major. In addition, as a part of their AS course work, students complete five mathematics and science courses to meet the graduation requirements of their program.

The AS degree maximizes the number of credits a student may transfer toward a baccalaureate degree within the College of Liberal Arts. Admission to this program is available throughout the academic year.

Prerequisites
ACT: Composite test score of 18 and above.
English: Placement into the College of Liberal Arts' Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227) course.
Mathematics: Placement into level C mathematics course. Typically, students entering this program will have completed at least three years of high school mathematics.

Science: Placement into any level D science course numbered 0885-250 or higher. Typically, students entering this program will have completed at least two years of high school science.

Enrollment requirements
To enroll in the College of Liberal Arts, students must have a grade-point average of 2.5 or higher upon graduating with the AS degree in applied liberal arts.

Applied liberal arts, AS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0502-110, 111	Written Communication I, II	8
0502-227	Writing Seminar	4
0887-200	Freshman Seminar	2
0880-2xx	NTID Humanities‡	3
0882-2xx	NTID Social Science‡	3
0515-210	Foundations of Sociology	4
0514-210	Introduction to Psychology	4
0507-301	Modern American History	4
08xx-xxx, 10xx-xxx	Mathematics and Science courses§	12
	Wellness Education†	0
Second Year		
	Liberal Arts Concentration*	12
10xx-xxx	Mathematics and Science courses§	8
0505-213	Fine Arts/Visual Arts	4
	Arts of Expression	4
	Professional Electives‡	20
Total Quarter Credit Hours		**92**

* Please see College of Liberal Arts Concentration Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Students will take five courses in a College of Liberal Arts professional area of study.
§ Students will take five specific mathematics and science courses as required by their chosen professional area.

Applied Mechanical Technology, AAS

www.rit.edu/NTID/amtAplusB

Dino Laury, Chairperson
(585) 286-4613 (VP), dino@mail.rit.edu

The AAS in applied mechanical technology is an Associate+Bachelor's degree program that prepares students to enter and successfully complete a baccalaureate program in the College of Applied Science and Technology in manufacturing engineering technology or mechanical engineering technology. Students strengthen their skills by taking NTID English and science courses or NTID math and science courses, as well as program courses. These courses systematically address the preparatory challenges that deaf and hard-of-hearing students face upon entry to the programs in the College of Applied Science and Technology.

Students in the applied mechanical technology program receive a comprehensive foundation in precision measurement, precision machining, computer-aided design applications, strength of materials, and machine design. Upon successful completion of the AAS degree in applied mechanical technology, students enroll directly into the bachelor's degree program in either manufacturing engineering technology or mechanical engineering technology.

Prerequisites
ACT: Composite test score of 18 or higher

English: Placement into the College of Liberal Arts' Writing Seminar (0502-227) course; students who qualify for Written Communication II (0502-111) will be considered for admission.

Mathematics: Entrance into NTID's Elements of Trigonometry (0884-220) course.

Science: Entrance into the College of Science's College Physics I course after a single NTID science course.

Enrollment requirements

Students who graduate in good standing from NTID and have maintained a grade of C or better in the six NTID applied mechanical technology technical courses should be well-prepared for the College of Applied Science and Technology.

Applied mechanical technology, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0813-220	Engineering Fundamentals	4
0890-212	Computing Tools for Engineering Technology	4
Choose two of the following courses:		8
0884-220	Elements of Trigonometry	
0885-201	Physics	
0502-111	Written Communication II	
0887-200	Freshman Seminar	2
0813-222	Manufacturing Processes	4
0890-214	CAD Applications in Engineering Tech	4
0884-275	Advanced Math	4
	Liberal Arts*	4
0502-227	Writing Seminar	4
0813-224	Industrial Processes	4
0890-216	Design, Dimensioning, and Tolerancing	4
1017-211	College Physics I	4
	Wellness Education†	0
Second Year		
0610-211	Introduction to Materials Technology	3
0610-304	Materials Testing	1
1017-212	College Physics II	4
0610-302	Introduction to Statics	4
0610-303	Strength of Materials	4
1016-231, 232	Calculus for Engineering Technology I, II	8
1017-213	College Physics III	4
0610-315	Principles of Mechanical Design 1	4
0610-305	Pneumatic and Hydraulic Systems	4
	Liberal Arts*	12
Total Quarter Credit Hours		**98**

* Please see General Education Distribution Requirements chart for more information. (AMT students are not required to take Capstone or Deaf cultural studies/ASL courses.)
† Please see Wellness Education Requirement for more information.

Arts and Imaging Studies, AAS

www.rit.edu/NTID/ais

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People who work in the arts 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 very large, exciting field that requires a variety of computer-based and traditional visual skills. The arts and imaging studies program provides opportunities for students to enter various careers ranging from creative to highly technical positions at various degree levels.

Program description

The arts and imaging studies programs include a core component of nine courses (27 credits) plus a required cooperative work experience. The core courses provide a solid foundation for continuing in advanced courses, a baccalaureate program, and employment. Several of the core courses are scheduled during the first year, and additional courses are completed during the second year.

In addition to the core courses taken in the first year, students immediately begin course work in their concentration. Students may choose a concentration in graphic design or graphic technology. Both concentrations consist of 24 credit hours.

All students entering the program will be given an aptitude assessment experience. As a result of this assessment profile, students will be counseled and placed into an initial concentration: graphic design for students with creative aptitude and interest; graphic technology for students with technical/production aptitude and interest. The assessment is not final. Based on success and demonstrated capabilities, students may request or be counseled to change their program concentration.

The program's curriculum includes nine credits of technical electives and three credits of free electives. Students may select their technical elective courses from four different professional focus areas that provide additional depth of skill and knowledge specific to a career pathway:
- graphic design
- photography
- print publishing
- Web design

Technical electives may be chosen from a concentration area, a list of technical electives or, as appropriate, courses from other related programs. Free electives can be selected from any program within RIT, depending on availability and prerequisites.

All students gain real work experience through one quarter of required cooperative education employment. Upon satisfactory conclusion of the co-op, students complete a required portfolio presentation course in which they refine and complete their portfolio as needed for an application to a baccalaureate program or the search for employment.

On-the-job responsibilities

Depending on the specific program concentration and elective course selection, graduates use 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, simple bindery, and finishing equipment.

Places of employment

Graduates usually find employment in a variety of commercial, corporate, government, and educational settings. Examples include computer graphics firms, advertising agencies, art studios, printing or manufacturing plants, prepress companies, in-house printing or

marketing departments, book and magazine publishing houses, newspaper facilities, government agencies, industrial training or media departments, educational media centers, and educational institutions.

Graduates may qualify for positions such as production graphic artist, graphic designer, digital photo artist, digital photography technician, digital prepress technician, video technician, website designer, website technician, and digital printing systems operator.

Prerequisites

Successful completion of a sampling experience offered during the Summer Vestibule Program and also during the academic year is required. The sampling activities provide opportunities for students to learn about the arts and imaging field, identify career opportunities, and evaluate their interest and aptitude for a degree program.

ACT-AAS minimum score = 18

ACT-AOS minimum score = 15

English-AAS: Placement into the Written Communication II (0502-111) course.

English-AOS: Placement into English level C or above. Students successfully completing AOS degrees typically enter with reading scores equivalent to 8.0 on the California Reading Test.

Mathematics-AAS/AOS: Placement into the Concepts of Measurement (0884-150) course. Typically, students entering this program will have completed at least two years of high school mathematics.

Science-AAS/AOS: Typically, students entering this program will have completed at least two years of high school science.

Arts and imaging studies, AAS degree, graphic design concentration, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0855-311	Basic Drawing	3
0855-252	Vector Graphics	3
0855-255	Principles of Design	3
0855-251	Bitmap Graphics	3
0855-253, 318	Typography I, II	6
0855-314	Color in Design	3
0855-331	Desktop Publishing I	3
0855-319	Graphic Design	3
0502-227	Writing Seminar	4
0887-200	Freshman Seminar	2
	Mathematics (Level B)‡	3
	Liberal Arts*	8
	Wellness Education†	0
Second Year		
0855-342	Web Design I	3
0855-361	Grid Systems	3
0855-315	History of Graphic Design	3
0855-362	Publication Design	3
0855-323	Digital Photography I	3
0855-363	Identity Systems Design	3
	Technical Electives	9
0806-101	Job Search Process	2
	Liberal Arts*	8
	Science (Level B or above)	3
	Deaf Cultural Studies/ASL*	3
0855-299	Cooperative Education	Co-op
Third Year		
0855-353	Portfolio Presentation	3
0855-351	Production Workshop	3
	Free Elective	3

COURSE		QTR. CR. HRS.
0806-201	Employment Seminar	1
	Capstone*	3
Total Quarter Credit Hours		**100**

* Please see General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Satisfied by Concepts of Measurement (0884-150) or higher-level course.

Arts and imaging studies, AAS degree, graphic technology concentration, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0855-251	Bitmap Graphics	3
0855-252	Vector Graphics	3
0855-323	Digital Photography I	3
0855-254	Applied Color Theory	3
0855-253	Typography I	3
0855-255	Principles of Design	3
0855-331	Desktop Publishing I	3
0855-321	Image Acquisition	3
0855-342	Web Design I	3
0502-227	Writing Seminar	4
0887-200	Freshman Seminar	2
	Mathematics (Level B)‡	3
	Liberal Arts*	8
	Wellness Education†	0
Second Year		
0855-322	Bitmap Graphics II	3
0855-344	Videography I	3
0855-324	Wide-Format Graphics	3
0855-333	Publication Production I	3
0855-332	PDF Production and Workflow	3
0855-352	Color Management	3
	Technical Electives	9
0806-101	Job Search Process	2
	Liberal Arts*	8
	Science (Level B or above)	3
	Deaf Cultural Studies/ASL*	3
0855-299	Cooperative Education	Co-op
Third Year		
0855-353	Portfolio Presentation	3
0855-351	Production Workshop	3
	Free Elective	3
0806-201	Employment Seminar	1
	Capstone*	3
Total Quarter Credit Hours		**100**

* Please see General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Satisfied by Concepts of Measurement (0884-150) or higher-level course.

Professional electives

Students select nine credit hours from one of the following professional areas.

COURSE		QTR. CR. HRS.
Graphic design		
0855-310	Visual Idea Development	3
0855-312	Intermediate Drawing	3
0855-313	Advanced Drawing	3
0855-316	Art History I	3
0855-317	Art History II	3
0855-364	Digital Illustration	3
Photography		
0855-371	Dynamic Image Preparation	3

COURSE		QTR. CR. HRS.
0855-372	Composite Imaging	3
0855-373	Digital Photography II	3
0855-374	Image Retouch and Restore	3
Print publishing		
0855-334	Database Publishing	3
0855-381	Desktop Publishing II	3
0855-382	Interactive PDF Publishing	3
0855-383	Publication Production II	3
0855-384	Digital Printing Systems	3
Web design		
0855-341	Graphics for the Web	3
0855-343	Computer Animation	3
0855-391	Web Design II	3
0855-392	Web Design III	3
0855-394	Interactive Digital Media	3

Arts and Imaging Studies, AOS

www.rit.edu/NTID/ais

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People who work in the arts 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 arts and imaging studies program provides opportunities for students to enter various careers ranging from creative to highly technical positions at various degree levels.

Program description
The arts and imaging studies programs include nine required core courses (27 credits) plus a required cooperative education experience. The core courses provide a solid foundation for continuing in advanced courses, a baccalaureate program, and employment. Several of the core courses are scheduled during the first year, and additional courses are completed during the second year.

In addition to the core courses taken in the first year, students immediately begin course work in their concentration. Students may choose a concentration in graphic design or graphic technology. Both concentrations consist of 24 credit hours.

All students entering the program will be given an aptitude assessment experience. As a result of this assessment profile, students will be counseled and placed into an initial concentration: graphic design for students with creative aptitude and interest; graphic technology for students with technical/production aptitude and interest. The assessment is not final. Based on success and demonstrated capabilities, students may request or be counseled to change their program concentration.

The program's curriculum includes nine credits of technical electives and three credits of free electives. Students may select their technical elective courses from four different professional focus areas that provide students with additional depth of skill and knowledge specific to a career pathway:
- graphic design
- photography
- print publishing
- Web design

Technical electives may be chosen from a concentration area, a list of technical electives, or, as appropriate, courses from other related programs. Free electives can be selected from any program within RIT, depending on availability and prerequisites.

All students gain real work experience through one quarter of required cooperative education employment. Upon satisfactory conclusion of the co-op, students complete a required portfolio presentation course in which they refine and complete their portfolio as needed for an application to a baccalaureate program or the search for employment.

On-the-job responsibilities
Depending on the specific program concentration and elective course selection, graduates use 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, simple bindery, and finishing equipment.

Places of employment
Graduates usually find employment in a variety of commercial, corporate, government, and educational settings. Examples include computer graphics firms, advertising agencies, art studios, printing or manufacturing plants, prepress companies, in-house printing or marketing departments, book and magazine publishing houses, newspaper facilities, government agencies, industrial training or media departments, educational media centers, and educational institutions.

Graduates may qualify for positions such as production graphic artist, graphic designer, digital photo artist, digital photography technician, digital prepress technician, video technician, website designer, website technician, and digital printing systems operator.

Prerequisites
Successful completion of a sampling experience offered during the Summer Vestibule Program and also during the academic year is required. The sampling activities provide opportunities for students to learn about the arts and imaging field, identify career opportunities, and evaluate their interest and aptitude for a degree program.

ACT-AAS minimum score = 18

ACT-AOS minimum score = 15

English-AAS: Placement into the Written Communication II (0502-111) course.

English-AOS: Placement into English level C or above. Students successfully completing AOS degrees typically enter with reading scores equivalent to 8.0 on the California Reading Test.

Mathematics-AAS/AOS: Placement into the Concepts of Measurement (0884-150) course. Typically, students entering this program will have completed at least two years of high school mathematics.

Science-AAS/AOS: Typically, students entering this program will have completed at least two years of high school science.

Arts and imaging studies, AOS degree, graphic design concentration, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0855-311	Basic Drawing	3
0855-252	Vector Graphics	3
0855-255	Principles of Design	3
0855-251	Bitmap Graphics	3
0855-253, 318	Typography I, II	6
0855-314	Color in Design	3
0855-331	Desktop Publishing I	3
0855-319	Graphic Design	3
	English Level C	12
0887-200	Freshman Seminar	2
	Mathematics (Level B)‡	3
	Wellness Education†	0
Second Year		
0855-342	Web Design I	3
0855-361	Grid Systems	3
0855-315	History of Graphic Design	3
0855-362	Publication Design	3
0855-323	Digital Photography I	3
0855-363	Identity Systems Design	3
	Technical Electives	9
0806-101	Job Search Process	2
	Social Science*	3
	Humanities*	3
	Communication Studies*	3
	Deaf Cultural Studies/ASL*	3
	Science (Level B or above)	3
0855-299	Cooperative Education	Co-op
Third Year		
0855-353	Portfolio Presentation	3
0855-351	Production Workshop	3
	Free Elective	3
0806-201	Employment Seminar	1
	Capstone*	3
Total Quarter Credit Hours		**101**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Satisfied by Concepts of Measurement (0884-150) or higher-level course.

Arts and imaging studies, AOS degree, graphic technology concentration, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0855-251	Bitmap Graphics	3
0855-252	Vector Graphics	3
0855-323	Digital Photography I	3
0855-254	Applied Color Theory	3
0855-253	Typography I	3
0855-255	Principles of Design	3
0855-331	Desktop Publishing I	3
0855-321	Image Acquisition	3
0855-342	Web Design I	3
	English Level C	12
0887-200	Freshman Seminar	2
	Mathematics (Level B)‡	3
	Wellness Education†	0
Second Year		
0855-322	Bitmap Graphics II	3
0855-344	Videography I	3

COURSE		QTR. CR. HRS.
0855-324	Wide-Format Graphics	3
0855-333	Publication Production I	3
0855-332	PDF Production and Workflow	3
0855-352	Color Management	3
	Technical Electives	9
0806-101	Job Search Process	2
	Social Science*	3
	Humanities*	3
	Communication Studies*	3
	Deaf Cultural Studies/ASL*	3
	Science (Level B or above)	3
0855-299	Cooperative Education	Co-op
Third Year		
0855-353	Portfolio Presentation	3
0855-351	Production Workshop	3
	Free Elective	3
0806-201	Employment Seminar	1
	Capstone*	3
Total Quarter Credit Hours		**101**

* Please see General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Satisfied by Concepts of Measurement (0884-150) or higher-level course.

Professional electives

Students select nine credit hours from one of the following professional areas.

COURSE		QTR. CR. HRS.
Graphic design		
0855-310	Visual Idea Development	3
0855-312	Intermediate Drawing	3
0855-313	Advanced Drawing	3
0855-316	Art History I	3
0855-317	Art History II	3
0855-364	Digital Illustration	3
Photography		
0855-371	Dynamic Image Preparation	3
0855-372	Composite Imaging	3
0855-373	Digital Photography II	3
0855-374	Image Retouch and Restore	3
Print publishing		
0855-334	Database Publishing	3
0855-381	Desktop Publishing II	3
0855-382	Interactive PDF Publishing	3
0855-383	Publication Production II	3
0855-384	Digital Printing Systems	3
Web design		
0855-341	Graphics for the Web	3
0855-343	Computer Animation	3
0855-391	Web Design II	3
0855-392	Web Design III	3
0855-394	Interactive Digital Media	3

Automation Technologies, AAS

www.rit.edu/NTID/esd

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ADMISSION TO THIS AAS PROGRAM HAS BEEN SUSPENDED FOR THE 2011-12 ACADEMIC YEAR.

The automation technologies program prepares graduates to function in complex automated system environments. The program promotes skill development in electrical/electronic, mechanical, and computer technologies. Graduates will be particularly well-suited to take advantage of growing employment opportunities in these expanding industries.

On-the-job responsibilities

An automation technology technician's responsibilities include installing, troubleshooting, repairing, upgrading, and maintaining automated systems and their components.

Places of employment

The program prepares graduates for technical jobs in industries with automation systems, including robotics. Positions for which graduates qualify include robotics technician, automation systems technician, electromechanical technician, instrumentation technician, engineering technician, fluid power controls/system technician, quality control technician, and process control technician.

Automation technologies, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0813-220	Engineering Fundamentals	4
0890-212	Computing Tools for ET	4
0884-212	Integrated Algebra	4
0887-200	Freshman Seminar	2
0813-222	Manufacturing Processes	4
0890-214	CAD Applications in Engineering Technology	4
0884-220	Elements of Trigonometry	4
0502-227	Writing Seminar	4
0891-216	Programming Concepts	4
0885-201	Physics I	4
0891-212	Industrial Electronics	4
	Liberal Arts*	4
	Wellness Education†	0
Second Year		
0891-214	Electromechanical Devices	4
0891-314	PLC Programming	4
0891-210	Pneumatic and Hydraulic Systems	3
	Liberal Arts*	8
0891-230	Automated Systems Troubleshooting I	4
0891-220, 320	Automated Systems I, II	8
0891-316	Mechanical Devices and Systems	3
	Deaf Cultural Studies/ASL*	3
0891-318	Applied Robotics	4
	Technical Elective	3
0886-101	Job Search	2
0891-299	Cooperative Education	Co-op
Third Year		
0891-330	Automated Systems Troubleshooting II	4
	Liberal Arts*	4
	Technical Elective	3
	Capstone*	3
Total Quarter Credit Hours		**106**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.

Automation Technologies, AOS

www.rit.edu/NTID/esd
Dino Laury, Chairperson
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ADMISSION TO THIS AOS PROGRAM HAS BEEN SUSPENDED FOR THE 2011-12 ACADEMIC YEAR.

The automation technologies program prepares students to function in complex automated system environments. The program promotes skill development in electrical/electronic, mechanical, and computer technologies. Graduates are particularly well-suited to take advantage of growing employment opportunities in these expanding industries.

On-the-job responsibilities

An automation technology technician's responsibilities include installing, troubleshooting, repairing, upgrading, and maintaining automated systems and their components.

Places of employment

The program prepares graduates for technical jobs in industries with automation systems, including robotics. Positions for which graduates qualify include robotics technician, automation systems technician, electromechanical technician, instrumentation technician, engineering technician, fluid power controls/system technician, quality control technician, and process control technician.

Automation technologies, AOS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0813-220	Engineering Fundamentals	4
0890-212	Computing Tools for ET	4
0884-212	Integrated Algebra	4
0887-200	Freshman Seminar	2
0813-222	Manufacturing Processes	4
0890-214	CAD Applications in ET	4
0884-220	Elements of Trigonometry	4
	English Level C	8
0891-216	Programming Concepts	4
0891-212	Industrial Electronics	4
0885-201	Physics I	4
	Wellness Education†	0
Second Year		
0891-214	Electromechanical Devices	4
0891-314	PLC Programming	4
0891-210	Pneumatic and Hydraulic Systems	3
	English Level C	4
0891-316	Mechanical Devices and Systems	3
	Deaf Cultural Studies/ASL*	3
	Communication Studies*	3
0886-101	Job Search	2
0891-230	Automated Systems Troubleshooting I	4
0891-220, 320	Automated Systems I, II	8
0891-318	Applied Robotics	4
	Social Science*	3
0891-299	Cooperative Education	Co-op
Third Year		
0891-330	Automated Systems Troubleshooting II	4
	Humanities*	3

COURSE		QTR. CR. HRS.
	Technical Elective	3
	Capstone*	3
Total Quarter Credit Hours		**104**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.

Business, AS

www.rit.edu/NTID/busAplusB

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The 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 the E. Philip Saunders College of Business, which offers a portfolio of comprehensive programs designed to prepare students for leadership in the business environment. The Saunders College is accredited by the Association to Advance Collegiate Schools of Business International, the premier accrediting organization for business schools.

Upon completion of the AS program, students with a minimum GPA of 2.5 will enroll directly in the Saunders College, where they complete their bachelor's degree in accounting, finance, international business, management, management information systems, marketing, or new media marketing. Admission to this program is available during the fall quarter only.

Prerequisites
ACT: composite test score of 18 and above.

English: Placement into the College of Liberal Arts' Writing Seminar (0502-227) course. Students who qualify for Written Communication II (0502-111) will be considered for admission if they are at level D or higher in mathematics.

Mathematics: Placement into level C mathematics course. Typically, students entering this program will have completed at least three years of high school mathematics.

Science: Placement into any level D science course numbered 0885-250 or higher. Typically, students entering this program will have completed at least two years of high school science.

Enrollment requirements
To enroll in the Saunders College, students must have a minimum grade-point average of 2.5 upon graduation with the AS degree in business.

Business, AS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0884-210	Applications of Algebra‡	4
0884-250	Science (Level D or above)	4
0804-101	Orientation to Business	3
0887-200	Freshman Seminar	2
	Liberal Arts*	4
0502-227	Writing Seminar	4
0884-260	Explorations in College Algebra	4
0801-211, 212	Financial Accounting I, II	8
0804-284	Fundamentals of Management	3
1016-225	Algebra for Management Science	4

COURSE		QTR. CR. HRS.
0112-270	Business Software Applications	2
	Wellness Education†	0
Second Year		
	Liberal Arts*	16
1016-226	Calculus for Management Science	4
0801-221, 222	Managerial Accounting I, II	8
	Laboratory Science (College of Science)	4
0535-352	Professional Communication for Business	4
0511-211	Principles of Microeconomics§	4
0511-402	Principles of Macroeconomics**	4
0112-315	Business Information Systems	4
0804-286	Fundamentals of Marketing	3
Total Quarter Credit Hours		**93**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Entering students who have the math proficiency to waive this course may take Explorations in College Algebra (0884-260).
§ Principles of Microeconomics (0511-211) is a social science course in the College of Liberal Arts. However, for students in the E. Philip Saunders College of Business, it is a required professional course. Therefore, graduates of this AS program who transfer to the E. Philip Saunders College will be required to take an additional College of Liberal Arts lower-division social science course to fulfill College of Liberal Arts General Education requirements. Principles of Microeconomics will be allocated to the business core in the E. Philip Saunders College of Business.
**Principles of Macroeconomics (0511-402) is a course in the E. Philip Saunders College of Business and is not allocated to the College of Liberal Arts distribution requirements.

Microsoft certification
As an authorized testing center for Microsoft Office Specialist, preparatory courses are offered for several exams each quarter.

Business Technology, AOS

www.rit.edu/NTID/bustech

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The business technology AOS degree program includes technical course work in accounting, computers, payroll, general office skills, and word processing/information processing skills. Students complete a sequence of courses that provides either an accounting technology or administrative support technology concentration.

This is a nontransfer occupational program, with primary emphasis on preparation for immediate employment.

Places of employment
Graduates of this program will find employment in a variety of settings, including business, industry, government, and education.

On-the-job responsibilities
Graduates will input, manipulate, and retrieve data; use interactive software, e-mail, and information processing skills; and use computers to maintain and reconcile various financial records. Positions for which graduates qualify include general office clerk, accounts receivable/payables clerk, payroll records clerk, word processing technician, cost accounting clerk, and microcomputer accounting clerk.

Prerequisites
English: Placement into English level C or above. Students successfully completing AOS degrees typically enter with reading scores equivalent to 8.0 on the California Reading Test.

Mathematics: Mathematics Applications for Business Technology (0884-155) 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.

Business technology, AOS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0801-201, 202	Accounting I, II	8
0804-101	Orientation to Business	3
0804-110	Business English	3
0804-111	Keyboarding	2
0804-112	OAS Formatting	3
0804-113	OAS Document Production I	4
0804-211	Records Management/Business Calculations	3
0804-212	Payroll/Spreadsheet Applications	3
	Mathematics requirement§	3
0887-200	Freshman Seminar	2
	English Level C	12
	Wellness Education†	0
Second Year		
0801-203	Accounting III	4
Choose one of the following:		7-8
0801-252, 253	Cost Accounting I, II‡	
0804-304	Database Applications for Business**	
0804-230	Administrative Support Technology Seminar**	3
0804-221	OAS Document Production II	4
0804-284	Fundamentals of Management	3
0804-286	Fundamentals of Marketing	3
0804-302	Advanced Applications for Word Processing	4
0804-303	Business Graphics	4
	Humanities*	3
	Science (Level B)	3
	Communication Studies*	3
0806-101	Job Search Process	2
	Deaf Cultural Studies/ASL*	3
0805-211	Web Development for Business**	3
0804-299	Cooperative Education	Co-op
Third Year		
Choose one of the following:		2-3
0801-260	Applied Accounting Techniques‡	
0804-310	Desktop Publishing for Business**	
0804-291	Applied Business Techniques	2
0806-201	Employment Seminar	1
0882-242	Law and Society	3
	Social Science*	3
	Capstone*	3
Total Quarter Credit Hours		**104/107**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Courses required for accounting technology option.
§ Mathematics Applications for Business Technology (0884-155) is required.
** Courses required for administrative support technology option.

Microsoft certification

The department operates an authorized testing center for Microsoft Office Specialist. Preparatory courses are offered for several exams each quarter.

Computer-Aided Drafting Technology, AAS

www.rit.edu/NTID/cadt

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People who work in computer-aided 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. Computer-aided drafting operators (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 students with a background in mathematics, building systems, construction regulations, site utilities, and materials and methods used in the architecture, engineering, and construction industries.

On-the-job responsibilities

Graduates will enter businesses and industries that need technical employees with skills in computer drafting technology and a broad knowledge of applications and procedures. Graduates will work for architectural, engineering, or construction firms creating engineering drawings.

Places of employment

Graduates will find work in a variety of settings, including government agencies and architectural, construction, and engineering firms. Positions for which graduates qualify include drafters/technicians for architectural, highway design, and civil environments.

Prerequisites

English: Placement in the College of Liberal Arts' Writing Seminar (0502-227) course. Students typically enter Writing Seminar with reading scores equivalent to 10.0 on the California Reading Test. However, students who complete AAS degrees typically enter NTID with reading scores equivalent to 9.0 on the California Reading Test.

Mathematics: Placement in Integrated Algebra (0884-212). Typically, students entering this program will have completed at least three years of high school mathematics.

Science: Placement into Physics I (0885-201) 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.

Computer-aided drafting technology, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0813-220	Engineering Fundamentals	4
0890-212	Computing Tools for Engineering Technology	4
0884-212	Integrated Algebra	4
0887-200	Freshman Seminar	2
0813-222	Manufacturing Processes	4
0890-214	CAD Applications in Engineering Technology	4
0884-220	Elements of Trigonometry	4
0502-227	Writing Seminar	4
0890-210	Construction CAD I	4

COURSE		QTR. CR. HRS.
0890-208	A/E/C Measuring Systems	2
0885-201	Physics I	4
	Liberal Arts*	4
	Wellness Education†	0
Second Year		
0890-220, 230	Construction CAD II, III	8
0890-255, 265	Construction Materials and Methods I, II	6
0884-275	Advanced Math	4
	Liberal Arts*	12
0890-275	Principles of Structural Systems	3
0806-101	Job Search Process	2
0890-310	Advanced Construction CAD	4
	Technical Elective	3
0890-375	Construction Regulations	3
0890-299	Cooperative Education	Co-op
Third Year		
0890-320	Presentation Graphics	4
	Deaf Cultural Studies/ASL*	3
0890-280	GIS Fundamentals	3
0890-355	Site Utilities Mechanical/Electrical Systems	3
	Capstone*	3
Total Quarter Credit Hours		**105**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.

Computer-Aided Drafting Technology, AOS

www.rit.edu/NTID/cadt

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People who work in computer-aided 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. Computer-aided drafting operators (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 gives students a background in mathematics, building systems, construction regulations, site utilities, and materials and methods used in the architecture, engineering, and construction industries.

On-the-job responsibilities
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 will work in architectural, engineering, or construction firms creating engineering drawings.

Places of employment
Graduates of this program will 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.

Prerequisites
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 English level C or above. Students successfully completing an AOS degree typically enter with reading scores equivalent to 8.0 on the California Reading Test.

Mathematics: Placement into Foundations of Algebra (0884-180) or a higher-level course. Typically, students entering this program will have completed at least three years of high school mathematics.

Science: Placement into Physics of Matter (0885-154) 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.

Computer-aided drafting technology, AOS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0813-220	Engineering Fundamentals	4
0890-212	Computing Tools for Engineering Technology	4
0884-180	Foundations of Algebra	4
0887-200	Freshman Seminar	2
	English Level C	12
0813-222	Manufacturing Processes	4
0890-214	CAD Applications in Engineering Technology	4
0884-212	Integrated Algebra	4
0890-210	Construction CAD I	4
0890-208	A/E/C Measuring Systems	2
0885-154	Physics of Matter	3
	Wellness Education†	0
Second Year		
0890-220, 230	Construction CAD II, III	8
0890-255, 265	Construction Materials and Methods I, II	6
	Humanities*	3
0884-220	Elements of Trigonometry	4
0890-275	Principles of Structural Systems	3
	Communication Studies*	3
0806-101	Job Search Process	2
0890-310	Advanced Construction CAD	4
	Social Science*	3
	Technical Elective	3
0890-375	Construction Regulations	3
	Deaf Cultural Studies/ASL*	3
0890-299	Cooperative Education	Co-op
Third Year		
0890-320	Presentation Graphics	4
0890-280	GIS Fundamentals	3
0890-355	Site Utilities Mechanical/Electrical Systems	3
	Capstone*	3
Total Quarter Credit Hours		**105**

† Please see Wellness Education Requirement for more information.
* Please see NTID's General Education Distribution Requirements chart for more information.

Computer-Integrated Machining Technology, AOS

www.rit.edu/NTID/cimt

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Computer-integrated machining technology students prepare 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. In addition, graduates can continue their education in manufacturing and engineering technology programs.

On-the-job responsibilities

Graduates will set up and operate lathes, milling machine tools, grinders, polishers, and computer numerical controlled machine tools; shape material into precision parts by conventional and nonconventional processes; follow blueprints; and use advanced measuring techniques to inspect work.

Places of employment

Graduates will find work in a variety of settings, including manufacturing, metal and/or precision optics manufacturing industries, engineering firms, and engineering research firms. Positions for which graduates qualify include entry-level and apprenticeship programs for positions such as a tool and die maker, instrument maker, mold maker, pattern maker, model maker, machinist, computer numerical control operator, or computer numerical control programmer trainee. Graduates who choose precision optics electives are also qualified for an entry-level position as a precision optics manufacturing technician. Graduates also work for companies that produce optical elements for a variety of applications.

Electives

Students primarily interested in traditional machining positions typically choose the following electives: technical elective, Design, Dimensioning, and Tolerancing (0890-216) from the applied mechanical technology program; advanced technical elective, CNC Toolpaths (0813-257); and machining technical elective, Automated Machining (0813-258).

Students primarily interested in precision optics manufacturing positions typically choose these electives: technical elective, Lens Design and Application (0813-240); advanced technical elective, Optical Testing (0813-242); and machining technical elective, Precision Optics Manufacturing II (0813-245).

Prerequisites

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 English level C or above. Students successfully completing AOS degrees typically enter with reading scores equivalent to 8.0 on the California Reading Test.

Mathematics: Placement into Foundations of Algebra (0884-180) 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 program will have completed at least two years of high school science.

Computer-integrated machining technology, AOS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0813-220	Engineering Fundamentals	4
0890-212	Computing Tools for Engineering Technology	4
0884-180	Foundations of Algebra	4
	English Level C	12
0887-200	Freshman Seminar	2
0813-222	Manufacturing Processes	4
0890-214	CAD Applications in Engineering Technology	4
0885-154	Physics of Matter	3
0813-231	Computer-Integrated Machining Technology 1	3
0813-250	Introduction to CNC	2
0813-255	Precision Measurement	2
0884-205	Trigonometry for Coordinate Analysis I	3
0813-239	Blueprint Reading	2
	Wellness Education†	0
Second Year		
0813-232, 233, 234	Computer-Integrated Machining Technology 2, 3, 4	12
0813-252	CNC Graphics	3
0813-251	Industrial Materials	3
0884-206	Trigonometry for Coordinate Analysis II	3
0813-254	CNC Solids	3
0813-244	Precision Optics Manufacturing I	2
Choose one of the following technical electives:		3
0813-240	Lens Design and Applications	
0885-201	Physics I	
0890-216	Design, Dimensioning, and Tolerancing	
Choose one of the following advanced technical electives:		3
0813-257	CNC Toolpaths	
0813-242	Optical Testing	
0806-101	Job Search Process	2
	Communication Studies*	3
	Social Science*	3
	Deaf Cultural Studies/ASL*	3
0813-299	Cooperative Education	Co-op
Third Year		
Choose one of the following manufacturing technical electives:		6
0813-258	Automated Machining	
0813-245	Precision Optics Manufacturing II	
	Humanities*	3
0806-201	Employment Seminar	1
	Capstone*	3
Total Quarter Credit Hours		**105**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.

Deaf Cultural Studies/American Sign Language, Cert.

www.rit.edu/NTID/ds

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The deaf cultural studies/American Sign Language certificate program offers deaf and hard-of-hearing students the opportunity to understand the deaf community as an entity unto itself and within the context of society as a whole. The program consists of two tracks: the advocacy and community track and the American Sign Language studies track.

Both tracks address the historical, anthropological, linguistic, literary, artistic, and multicultural aspects of deaf people's lives. 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 advocacy and community track improves students' ability to advocate for their rights in the workplace and contribute to leadership in the greater community. The ASL studies track enhances students' marketability as teachers of ASL and deaf culture in the workplace, at schools, or within the greater community.

Candidates are granted the certificate upon successful completion of the course requirements in either of the tracks. Courses are offered as part of the NTID social sciences and humanities curricula. Applicants for the deaf cultural studies/American Sign Language certificate must be either matriculated students in good standing in an undergraduate degree program at RIT/NTID or graduates holding a degree from an RIT/NTID program. Introduction to Deaf Cultural Studies and ASL (0880-190) is a prerequisite for admission to the program.

COURSE		QTR. CR. HRS.
Advocacy and community track: required courses		
0882-222	Deaf Culture and Community	3
0882-285	Civil Rights and Deaf People	3
0886-249	Structure of ASL	3
0880-207	Organizational Communication and the Deaf Employee	3
	Total Quarter Credit Hours	12
American Sign Language studies track: required courses		
0882-222	Deaf Culture and Community	3
0886-249	Structure of ASL	3
0886-250	Introduction to ASL Teaching	3
Choose one of the following electives:		3
0880-207	Organizational Communication and the Deaf Employee	
0882-221	Deaf Heritage	
0882-223	Deaf Women's Studies	
0882-285	Civil Rights and Deaf People	
Total Quarter Credit Hours		**12**

Hospitality and Service Management, AS

www.ntid.edu/NTID/hsmAplusB

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The associate of science degree in hospitality and service management is an Associate+Bachelor's degree program designed to prepare deaf and hard-of-hearing students to enter and successfully complete a baccalaureate program in the College of Applied Science and Technology's School of International Hospitality and Service Innovation.

Upon completion of the AS program with a minimum GPA of 2.5, students will enroll directly in the College of Applied Science and Technology, where they will pursue a bachelor's degree in hospitality and service management. Students may choose one of two concentrations: hotel and resort management, or food management. Admission to this program is available for the fall quarter only.

Prerequisites
ACT: composite test score of 18 and above.

English: Placement into the College of Liberal Arts' Writing Seminar (0502-227) course. Students who qualify for Written Communication II (0502-111) will be considered for admission if they are at level D or higher in mathematics.

Mathematics: Placement into level C mathematics course. Typically, students entering this program will have completed at least three years of high school mathematics.

Science: Placement in any level D science course numbered 0885-250 or higher. Typically, students entering this program will have completed at least two years of high school science.

Enrollment requirements
To enroll in the College of Applied Science and Technology's School of International Hospitality and Service Innovation, the student must present a grade-point average of 2.5 or higher upon graduation with the associate in science degree.

Hospitality and service management, AS degree, hotel and resort management concentration, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0502-227	Writing Seminar	4
0887-200	Freshman Seminar	2
0884-210	Applications of Algebra	4
0622-200	Hotel Operations	4
0619-220	Survey of Service Management	2
0622-210	Hotel Marketing and Sales Management	4
0801-211, 212	Financial Accounting I, II	8
	NTID Science (Level D)	4
0619-221	Basic Computer Applications	2
0884-260	Explorations in College Algebra	4
	Liberal Arts*	4
0622-310	Resort Development and Management	4
1016-225	Algebra for Management Science	4
	Wellness Education†	0
Second Year		
	Liberal Arts*	16
0801-221, 222	Managerial Accounting I, II	8
0511-211	Principles of Microeconomics	4
0622-315	Facility and Property Management	4

COURSE		QTR. CR. HRS.
	Science with Lab‡	4
0622-355	Financial Management for Hotels	4
1016-319	Data Analysis I	4
0804-286	Fundamentals of Marketing	3
0621-499	Cooperative Education	Co-op
Total Quarter Credit Hours		**97**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Health Awareness (1026-221) or Medical Laboratory Procedures (1026-220) is recommended.

Hospitality and service management, AS degree, food management concentration, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0502-227	Writing Seminar	4
0887-200	Freshman Seminar	2
0884-210	Applications of Algebra	4
0621-225	Principles of Food Production	4
0619-220	Survey of Service Management	2
0884-260	Explorations in College Algebra	4
0801-211, 212	Financial Accounting I, II	8
	NTID Science (Level D)	4
0619-221	Basic Computer Applications	2
	Liberal Arts*	4
	Science with Lab‡	4
0621-314	Sanitation and Safety	2
1016-225	Algebra for Management Science	4
	Wellness Education†	0
Second Year		
	Liberal Arts*	16
0621-331	Restaurant Operations	6
0801-221, 222	Managerial Accounting I, II	8
0511-211	Principles of Microeconomics	4
0621-318	Food and Beverage Management	4
1016-319	Data Analysis I	4
0804-286	Fundamentals of Marketing	3
	HSM Program Elective	4
0621-499	Cooperative Education	Co-op
Total Quarter Credit Hours		**97**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Health Awareness (1026-221) or Medical Laboratory Procedures (1026-220) is recommended.

Laboratory Science Technology, AAS

www.rit.edu/NTID/lst

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The laboratory science technology program was developed primarily from an industry perspective. The program prepares students for employment as laboratory technicians and includes a foundation of course sequences in chemistry, biology, instrumental analysis, laboratory mathematics, and a unique six-part laboratory applications series. 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, environmental, industrial, forensic, and food analysis. Students may choose from AAS and AOS degree programs.

Students earning an AAS degree have the option of finding employment or continuing to work toward a baccalaureate degree. Under the program's agreement with the Center for Multidisciplinary Studies, individuals who maintain a grade-point average of 3.0 or better while in the AAS program enroll directly in the center's bachelor's degree program. Through this program students complete a BS degree in applied arts and science with a concentration in biotechnology studies. For more information go to www.rit.edu/lstAplusB.

On-the-job responsibilities
Technicians are involved with the collection and preparation of samples. They also perform instrumental, volumetric, gravimetric, and biological analyses. Additional job responsibilities may include the interpretation and reporting of experimental results.

Places of employment
The program prepares graduates for technical jobs in municipal, public, private, and industrial laboratories.

Prerequisites
English—AAS: Placement in the College of Liberal Arts' Writing Seminar (0502-227) course. Students typically enter Writing Seminar with reading scores equivalent to 10.0 on the California Reading Test. However, students who complete AAS degrees typically enter NTID with reading scores of 9.0 on the California Reading Test.

Mathematics: Placement in level C mathematics or higher. Typically, students entering this program will have completed at least three years of high school mathematics.

Science: Typically, students entering this program will have completed at least two years of high school science. Completion of high school chemistry recommended.

Laboratory science technology, AAS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0879-200	Introduction to Laboratory Science Technology	2
0885-215	Fundamentals of Cellular Biology	4
0885-205, 206	Fundamentals of Chemistry I, II	8
0502-227	Writing Seminar	4
0887-200	Freshman Seminar	2
0879-201, 202	Laboratory Science Technology Lab Applications I, II	4
0885-291	Principles of Analytical Chemistry	4
0884-212	Integrated Algebra	4
0884-231	Laboratory Math I	3
	Liberal Arts*	8
	Deaf Cultural Studies/ASL*	3
Second Year		
0879-203, 204, 205	Laboratory Science Technology Lab Applications III, IV, V	6
0879-301, 302, 303	Instrumental Analysis I, II, III	10
0885-292	Principles of Organic Chemistry	4
0884-232	Laboratory Math II	3
0879-398	ST: Molecular Biology	4
0879-218	Introduction to Laboratory Science Technology Microbiology	3
0879-313	Chemical Technology	4
0879-314	Biotechnology	4
0806-101	Job Search Process	2
	Liberal Arts*	4
	Wellness Education†	0

COURSE		QTR. CR. HRS.
0879-299	Cooperative Education	Co-op
Third Year		
0879-206	Laboratory Science Technology Lab Applications VI	2
0879-250	Senior Seminar	2
	Technical Elective‡	3-4
	Liberal Arts*	4
	Capstone*	3
Total Quarter Credit Hours		**104-105**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Students must choose one technical elective from the list of laboratory science technology courses or seek department approval for a course from another college.

Laboratory Science Technology, AOS

www.rit.edu/NTID/lst

Vincent A. Daniele, Chairperson
(585) 475-6744, vadntm@rit.edu

The laboratory science technology program was developed primarily from an industry perspective. The program prepares students for employment as laboratory technicians and includes a foundation of course sequences in chemistry, biology, instrumental analysis, laboratory mathematics, and a unique six-part laboratory applications series. 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, environmental, industrial, forensic, and food analysis. Students may choose from AAS and AOS degree programs.

On-the-job responsibilities
Technicians are involved with the collection and preparation of samples. They also perform instrumental, volumetric, gravimetric, and biological analyses. Additional job responsibilities may include the interpretation and reporting of experimental results.

Places of employment
The program prepares graduates for technical jobs in municipal, public, private, and industrial laboratories.

Prerequisites
English—AOS: Placement in English level C or above. Students successfully completing AOS degrees typically enter with reading scores equivalent to 8.0 on the California Reading Test.

Mathematics: Placement in level C mathematics or higher. Typically, students entering this program will have completed at least three years of high school mathematics.

Science: Typically, students entering this program will have completed at least two years of high school science. Completion of high school chemistry recommended.

Laboratory science technology, AOS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
0879-200	Introduction to Laboratory Science Technology	2
0885-215	Fundamentals of Cellular Biology	4

COURSE		QTR. CR. HRS.
0885-205, 206	Fundamentals of Chemistry I, II	8
	English Level C	12
0887-200	Freshman Seminar	2
0879-201, 202	Laboratory Science Technology Lab Applications I, II	4
0885-291	Principles of Analytical Chemistry	4
0884-212	Integrated Algebra	4
0884-231	Laboratory Math I	3
	Wellness Education†	0
Second Year		
0879-203, 204, 205	Laboratory Science Technology Lab Applications III, IV, V	6
0879-301, 302, 303	Instrumental Analysis I, II, III	10
0884-232	Laboratory Math II	3
0885-292	Principles of Organic Chemistry	4
0879-398	ST: Molecular Biology	4
0879-218	Introduction to Laboratory Science Technology Microbiology	3
0879-313	Chemical Technology	4
0879-314	Biotechnology	4
0806-101	Job Search Process	2
	Deaf Cultural Studies/ASL*	3
	Humanities*	3
	Social Sciences*	3
0879-299	Cooperative Education	Co-op
Third Year		
0879-206	Laboratory Science Technology Lab Applications VI	2
0879-250	Senior Seminar	2
	Technical Elective‡	3-4
	Communication Studies*	3
	Capstone*	3
Total Quarter Credit Hours		**105-106**

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
‡ Students must choose one technical elective from the list of laboratory science technology courses or seek department approval for a course from another college.

Performing Arts, Cert.

www.rit.edu/NTID/pa

Joseph Bochner, Chairperson
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The performing arts certificate is designed to provide students with an additional set of marketable skills. Students develop knowledge of standard theatrical operating procedures as well as principles and practices of theater accessibility for deaf people, allowing them to work in professional, regional, and community theater. The program also provides a solid foundation for both deaf and hearing students who wish to pursue further education in film, video, theater, and related forms of performing arts.

The certificate includes knowledge of theater terminology, practices, and protocols; issues in script analysis; ASL translation and accessibility; and experience in performance and technical theater. Students may take four 3-credit courses in the performance/script track (for students interested in acting, dramaturgy, translation, and dance/movement) or the technical theater track (for students interested in scenic, lighting, and costume design/technology, and stage management). A 3-credit production practicum is required for both tracks. Students will be granted the performing arts

certificate in either performance/script or technical theater upon successful completion of 15 credit hours.

This program is not intended as a stand-alone certification. Applicants for the performing arts certificates must be matriculated and in good standing in an undergraduate program at RIT/NTID or graduates holding an undergraduate degree from one of those programs. Introduction to Performing Arts (0881-250) is a prerequisite.

Performing arts certificate–performance/script emphasis

COURSE		QTR. CR. HRS.
Required course		
0881-298	Performing Arts Practicum	3
Elective courses		
Choose four of the following:		12
0881-256	Script Analysis	
0881-210	Acting I	
0881-260	Acting II	
0881-258	Introduction to Play Creating	
0881-168	Jazz	
0881-266	Ballet	
0881-267	Fundamentals of Choreography	
0881-202	History of Theater	
0881-204	Deaf Theater History	
0881-217	Stage Combat	
0881-218	Dance History	
0881-166	Sign Mime and Creative Movement	
0881-253	Arts Management	
0881-259	Creative Translation	
0881-261	Audition Technique	
0881-167	Dance Performance	
0881-257	Introduction to Dramatic Literature	
Total Quarter Credit Hours		**15**

Performing arts certificate–technical theater emphasis

COURSE		QTR. CR. HRS.
Required course		
0881-298	Performing Arts Practicum	3
Elective courses		
Choose four of the following:		12
0881-256	Script Analysis	
0881-222	Scenic Technology I	
0881-223	Scenic Technology II	
0881-224	Scene Painting	
0881-231	Costume Technology I	
0881-232	Costume Technology II	
0881-233	Stage Make-up	
0881-241	Lighting Technology I	
0881-242	Lighting Technology II	
0881-253	Arts Management	
0881-272	Stage Management	
Total Quarter Credit Hours		**15**

Pre-baccalaureate Studies

General information

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 pre-baccalaureate studies career exploration option.

Pre-baccalaureate studies 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 take courses taught by support department and other NTID faculty, along with entry-level courses taught in other RIT colleges. While in the program, students receive academic advising as well as career counseling.

Students do not receive a degree in pre-baccalaureate studies. They 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.

Arts and Imaging Studies

Kenneth F. Hoffmann, Chairperson, Arts and Imaging Studies

Students entering pre-baccalaureate studies in arts and imaging studies will typically be required to have:

ACT: minimum score of 18

English: Placement in the Writing Seminar (0502-227) course

Mathematics: Placement in level B mathematics course, Concepts of Measurement (0884-150) or higher, for BFA degrees or level D, 0884-250 or higher, for BS degrees

Science: Placement in level B science, 0885-150 or higher, for BFA degrees or level D, 0885-250 or higher, for BS degrees.

Pre-baccalaureate studies in the imaging arts and sciences in the schools of Art, Design, and American Crafts, typical course sequence.

COURSE		Qtr. Cr. Hrs.
First Year		
0855-310	Visual Idea Development	3
0855-311, 312, 313	Basic, Intermediate, Advanced Drawing	9
0855-251	Bitmap Graphics	3
0855-255	Design Concept Development	3
0855-252	Vector Graphics	3
0855-253	Typography I, II	6
0855-314	Color in Design	3
	Elective	3
	Liberal Arts*	12
0887-200	Freshman Seminar	2
Total Quarter Credit Hours		**44**

*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).

Note: Portfolio of original artwork is required to determine admission. See the College of Imaging Arts and Sciences support coordinator for further information.

Pre-baccalaureate studies in imaging arts and sciences in the School of Photographic Arts and Sciences, BFA degree, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
0855-323, 373	Digital Photography I, II	6
0855-311, 312	Basic and Intermediate Drawing	6
0855-310	Visual Idea Development	3
0855-255	Design Concept Development	3
0855-254	Applied Color Theory	3
0855-251	Bitmap Graphics	3
0855-321	Image Acquisition	3
0855-322	Image Manipulation	3
	Liberal Arts*	12
0887-200	Freshman Seminar	2
Total Quarter Credit Hours		**44**

*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).

Pre-baccalaureate studies in imaging arts and sciences in the School of Photographic Arts and Sciences, BS degree, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
0855-251	Bitmap Graphics	3
0855-310	Visual Idea Development	3
0855-254	Applied Color Theory	3
0855-255	Design Concept Development	3
0855-321	Image Acquisition	3
0855-322	Image Manipulation	3
0855-323	Digital Photography I	3
0884-250 or higher	Level D Math	4
0885-250 or higher	Level D Science	4
	Liberal Arts*	12
0887-200	Freshman Seminar	2
Total Quarter Credit Hours		**43**

*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).

Pre-baccalaureate studies in imaging arts and sciences, film and animation option, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
2065-217	Digital Video for Multimedia#	4
2065-331	Introduction to Animation	4
2065-342	Scriptwriting I	3
2065-222	Film Language	2
	Theater Electives/NTID Performing Arts**	2–8
	Liberal Arts*	12
Total Quarter Credit Hours		**27–33**

**See College of Imaging Arts and Sciences support coordinator for current information regarding theater electives.
*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).
#With departmental permission.

Pre-baccalaureate studies in imaging arts and sciences in the School of Print Media, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
0855-251	Bitmap Graphics	3
0855-252	Vector Graphics	3
0855-253	Typography I	3

0855-254	Applied Color Theory	3
0855-321	Image Acquisition	3
0855-322	Image Manipulation	3
0884-180	Foundations of Algebra	4
0884-210	Applications of Algebra	4
Choose one of the following:		4
0884-260	Explorations in College Algebra	
1016-225	Algebra for Management Science	
0885-250 or higher	Level D Science	4
	Liberal Arts*	12
0887-200	Freshman Seminar	2
Total Quarter Credit Hours		**48**

*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).

Liberal Studies

Kathryn L. Schmitz, Chairperson, Liberal Studies

Students entering pre-baccalaureate studies in liberal studies will typically be required to have:

ACT: Minimum composite score of 19 with a reading score of 20 and all other skill area scores of 18 or higher

English: Placement in Written Communication II (0502-111)

Mathematics: Placement in the NTID Advanced Mathematics (0885-275) course or higher

Pre-baccalaureate studies in liberal arts, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
0853-200	Freshman Seminar	2
	First-year major courses depending on program of study	12
	Liberal Arts*	12
	Mathematics or Science	4
	NTID Humanities or Social Science course	3
	Pre-baccalaureate courses#	6-8
Total Quarter Credit Hours		**39-41**

*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).
#Pre-baccalaureate courses are an option to strengthen students' skills in critical thinking, learning strategies and specific discipline areas.

Science and Mathematics

Vincent A. Daniele, Chairperson, Science and Mathematics

Students entering pre-baccalaureate studies in science or mathematics will typically be required to have:

ACT: Minimum composite score of 19 with reading and mathematics scores of 20 and English and science scores of 18

English: Placement in Written Communication II (0502-111)

Mathematics: Placement in the NTID Advanced Mathematics (0885-275) course or higher

Pre-baccalaureate studies in biology, biotechnology, medical sciences, environmental science, and environmental management, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
0853-200	Freshman Seminar	2
	Pre-baccalaureate courses#	(2-5)
1001-201, 202, 203	General Biology I, II, III	9
1001-205, 206, 207	General Biology Lab	3
	Liberal Arts*	12
1016-204	College Algebra and Trigonometry	4
1016-214, 215	Elementary Calculus I, II ‡	6
Total Quarter Credit Hours		**38-41**

#Pre-baccalaureate courses are an available option to strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.
*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).
‡Alternative mathematics courses may be required as prerequisites, depending on placement.

Pre-baccalaureate studies in science, chemistry option, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
0853-200	Freshman Seminar	2
	Pre-baccalaureate courses#	2-5
1011-215, 216, 217	General and Analytical Chemistry I, II, III	10
1011-205, 206, 227	Chemistry Labs	3
Choose one group of courses:		8-12
Group A:		
1016-261, 262	Calculus with Foundations I, II	
Group B:		
1016-271, 272, 273	Calculus A, B, C	
	Liberal Arts*	12
Total Quarter Credit Hours		**37-44**

#Pre-baccalaureate courses are available to strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.
*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).

Pre-baccalaureate studies in science, math, or physics options, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
0853-200	Freshman Seminar	2
	Pre-baccalaureate courses#	2-5
Choose one of the following science sequences:		12
1011-205, 206, 207	Chemical Principles I, II, III with Labs	
1017-311, 312, 313	University Physics I, II, III ‡§	
Choose one group of courses:		12
Group A:		
1016-271, 272, 273	Calculus A, B, C	
Group B:		
1016-281, 282, 283	Project-Based Calculus I, II, III	
	Liberal Arts*	12
Total Quarter Credit Hours		**40-43**

#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.
*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).
§Students must choose one of the two physics sequences for the physics option.

Engineering Studies

Dino Laury, Chairperson, Engineering Studies

Pre-baccalaureate studies in engineering option, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
0853-200	Freshman Seminar	2
	Pre-baccalaureate courses#	(2)
	Major-related courses depending on area of interest	16
1011-208	College Chemistry	4
1017-311, 312	University Physics I, II	8
	Liberal Arts*	12
1016-281, 282, 283	Calculus I, II, III ‡	12
Total Quarter Credit Hours		**54–56**

#Pre-baccalaureate courses are an option to strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.
*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).
‡Alternative mathematics courses may be required as prerequisites, depending on placement.

Pre-baccalaureate studies in engineering technology option, typical course sequence

COURSE		Qtr. Cr. Hrs.
First Year		
0853-200	Freshman Seminar	2
	Pre-baccalaureate courses#	(2)
0606-101	Engineering Technology Seminar	2
	Major-related courses depending on area of interest	16
	Liberal Arts*	12
0692-221, 222	Technical Math I, II ‡	8
	Pre-calculus for Engineering Technology‡	(4)
1016-231, 232	Calculus for Engineering Technology I, II ‡	8
Total Quarter Credit Hours		**48-54**

#Pre-baccalaureate courses are an option to strengthen students' skills in critical thinking, learning strategies, and specific discipline areas.
*Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).
‡Alternative mathematics courses may be required as prerequisites, depending on placement.

National Technical Institute for the Deaf

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The Honorable Louise M. Slaughter, Member, U.S. House of Representatives, New York State

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Jane Ratcliffe Pulver

College of Science

Sophia Maggelakis, Dean
www.science.rit.edu

Programs of study

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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, under the direction of our faculty members, 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.

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. 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 liberal arts also are required by employers for promotion and career advancement.

Admission requirements
For information on undergraduate admission, including transfer and freshman admission guidelines, please see 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.

Faculty
The college has more than 160 faculty members teaching in the fields of science and mathematics. All are committed to the education of undergraduate and graduate students, and most hold a doctoral degree. A variety of faculty expertise means students are likely to find a faculty member with similar interests to serve as a mentor.

Our faculty members are dedicated professors who also practice their professions outside of the classroom, participating in research and professional activities.

Facilities
The College of Science's programs are conducted in three major facilities on campus: Gosnell Hall, the Chester F. Carlson Center for Imaging Science, and the Center for Bioscience Education and Technology.

Gosnell Hall has nine classrooms, 22 teaching laboratories, and 16 research laboratories that provide space for laboratory course work and student research projects. Some of the facilities within Gosnell Hall have specialized purposes. For example, we have a

thin films laboratory, an animal care facility, a plasma etching laboratory, an electronics laboratory, a quantum optics laboratory, and a nuclear magnetic resonance laboratory.

The Bates Science Study Center in Gosnell Hall provides a comfortable, wireless computing environment for study groups and individual tutoring sessions with faculty. The 60,000-square-foot south wing of Gosnell Hall—the Center for Excellence in Mathematics, Science, and Technology—has an additional nine media-supported classrooms, three computer laboratories, two statistical computing laboratories, five science laboratories, a laser light scattering laboratory, a greenhouse, and community areas, including the Bruce and Nora James Atrium.

The Chester F. Carlson Center for Imaging Science has teaching and research facilities, including laboratories for visual perception, digital imaging, astronomical imaging, optics, multi-modal biomedical imaging, video analysis and remote sensing. There are also laboratories dedicated to the study of optics, magnetic materials and granular materials. The Color Science Hall is dedicated to the study of color science.

The Center for Bioscience Education and Technology provides a comprehensive environment to support academic, community, and career-training programs in biotechnology and the emerging life and medical sciences. The facility consists of multi-purpose, high-tech laboratories and classrooms for workforce development, academic programs, continuing education programs, research, K-12 student workshops, and secondary school training programs.

State-of-the-art computer facilities are available in the college as well as in labs throughout the university. A valuable resource for the college's programs, these facilities utilize computers in the application of mathematics and science. The college also operates an observatory on campus.

Cooperative education/Internships

In our cooperative education plan, a student alternates quarters of paid work experience with on-campus academic study. Co-op employment experience has many advantages. It helps students gain insight into how classroom learning is applied in real work settings, gives them a chance to experience their professional field of study, and helps them acquire practical experience that is valuable in obtaining employment or applying to a graduate program. Salaries earned from cooperative education experiences enable students to offset a portion of the cost of their education.

Co-op is not a requirement in most of our programs, although it is strongly encouraged. Full participation in a co-op experience means a student will graduate in five years. The Office of Cooperative Education and Career Services assists students in obtaining co-op positions. The following tables outline the co-op options.

Cooperative education schedule for five-year programs in biology, biotechnology, computational mathematics, applied mathematics, applied statistics (A and B block), and physics (C block):

YEAR		FALL	WINTER	SPRING	SUMMER
1 and 2		RIT	RIT	RIT	—
3 and 4	A	RIT	Co-op	RIT	Co-op
	B	Co-op	RIT	Co-op	RIT
	C	RIT	RIT	Co-op	Co-op
5	A	RIT	Co-op	RIT	—
	B	Co-op	RIT	RIT	—
	C	RIT	RIT	Co-op	—

Cooperative education schedule for five-year chemistry and biochemistry programs*:

YEAR		FALL	WINTER	SPRING	SUMMER
1		RIT	RIT	RIT	Co-op
2, 3 and 4	A	RIT	Co-op/RIT	RIT	Co-op
	B	Co-op	RIT	Co-op	RIT
5	A	RIT	Co-op	RIT	—
	B	Co-op	RIT	RIT	—

* Some students may elect to co-op for a double block (i.e., winter and spring).

Students in the environmental science and imaging science programs are encouraged to participate in optional co-op blocks beginning the summer of the second year of their program. Students in the bioinformatics program are required to complete one cooperative education experience.

Research

Our students are encouraged to work with faculty members as they pursue their research. Many joint student-faculty research projects have resulted in publication in professional literature. Student research is conducted in campus laboratories and through field studies. Opportunities for research across disciplines develop from the collaboration of students and faculty who share common interests. The results of student research projects are recognized in weekly forums and at the Undergraduate Research Symposium at the end of summer.

Accreditation

Programs in chemistry and biochemistry are approved by the Committee on Professional Training of the American Chemical Society.

Advising

Each student is assigned an academic adviser who provides counsel on course selection, advice about careers, and information on RIT services. It is common for a science major to have several mentors among the faculty who help with academic, career, and personal questions.

Academic enrichment

Honors Program: Students who demonstrate a high level of achievement at the high school level may be invited to join the Honors program. These students will participate in Honors course work throughout their program of study and experiential learning activities under the guidance of a faculty mentor. Honors students will be selected during the admissions process.

Minors: RIT offers students more than 95 minors to choose from to enhance their academic program or further develop a personal area of interest. For a detailed list of minors, including courses, please refer to the Minors section of this bulletin.

Study Abroad: RIT encourages all students to consider a study abroad program. Students may study full time at a variety of host schools and are able to select courses that fulfill requirements in their academic field of study and/or RIT liberal arts general education requirements. RIT's Study Abroad Office has information about foreign study options and opportunities.

Professional student organizations: The college maintains memberships in the following professional organizations: Imaging Science and Technology Student Chapter, Honorary Physics Society, the Society of Physics Students, American Society for Biochemistry and Molecular Biology Student Affiliates, American Mathematical Society, Mathematical Society of America, and the Society for Industrial and Applied Mathematics, to name a few.

Special opportunities

Accelerated dual degree options: Some programs offer accelerated, five-year dual BS/MS degree options. These degrees offer students the opportunity to earn a bachelor's degree and a master's degree in less time than pursuing each degree individually. Please refer to individual programs, the *Graduate Bulletin,* or the college's website for more information.

Graduate study: The college offers doctorate degrees in astrophysical sciences and technology, color science, and imaging science; and master of science degrees in applied and computational mathematics, astrophysical sciences and technology, bioinformatics, chemistry, color science, environmental science, imaging science, and materials science and engineering (offered jointly with the Kate Gleason College of Engineering). For more information regarding these graduate programs, please refer to the *Graduate Bulletin* or visit the college's website.

Premedical Studies Advisory Program

The premedical studies advisory program is designed to provide guidance and assistance to all RIT students who are interested in continuing their education in one of the health professions; e.g., medicine, osteopathy, dentistry, optometry, podiatry, or veterinary science. Faculty members who participate in this program provide advice on the prerequisites (course selection, health-related experiences, extracurricular activities) needed for application to various health-related professional schools. In addition, they provide assistance with the application process.

Enrollment in premedical studies

The premedical studies advisory program is available to students who are enrolled in one of the degree granting programs offered at RIT or to nonmatriculated students taking the premedical core courses or preprofessional prerequisite courses. To enroll in the program, students must contact the premedical studies office in room 1109 in the Center for Bioscience Education and Technology (CBET), or call Kristen Waterstram-Rich, Director, at (585) 475-7105.

Premedical core courses and academic programs

To complete the academic requirements necessary to gain admission to doctoral programs in the health professions, a student may enroll in any BS program at RIT and combine that program's course requirements with the premedical core courses. The way in which program requirements are combined with the premedical core courses varies according to the program in which the student is enrolled. The curricula of certain programs—in particular, those in the College of Science—include all of the premedical core courses. Other programs require only a few of the required courses, so students in these programs may require additional time, perhaps summers, to complete all required courses. It is important that these courses be completed by the end of the third year or before the student expects to take the MCAT, DAT, OAT, GRE, or other standardized tests required for admission to a health-related professional school. Careful planning and scheduling, with the guidance of the premedical studies advisers, is crucial to success. The prerequisites for medical school, and most health-related professional schools, are provided as follows:

Biology	1 year	With laboratory
Chemistry	1 year	General and analytical chemistry, with laboratory
Organic chemistry	1 year	With laboratory
Physics	1 year	With laboratory
English	1 year	

Note: In addition to these core courses, which are required by nearly all U.S. medical schools, courses in mathematics, psychology/behavioral sciences, or biology may be required by specific medical schools. The admission requirements of each medical school are published and may be obtained from the premedical advising committee. Some medical schools refuse to accept advanced placement credit for these core courses.

Combining the requirements of a degree program in the College of Science with the science premedical core courses*

If you major in:	You will need to take the courses required for your major, plus:
Applied mathematics	†
Applied statistics	†
Biochemistry	None
Bioinformatics	One year of physics and one year of organic chemistry
Biology	None
Chemistry	One year of biology
Computational mathematics	†
Environmental science	One year of organic chemistry
Imaging science	†
Molecular bioscience and biotechnology	One year of physics
Physics	One year of biology, one year of organic chemistry, and an additional quarter of mathematics

* Some rearrangement of the typical pattern of course work within a program may be necessary.
† Course credits beyond the usual 12 quarters needed to complete degree requirements may be necessary.
Note: Students enrolled in other RIT programs should consult with premedical advisers for assistance in planning a curriculum that includes the premedical core courses.

Health-related experience: All students interested in the health professions should obtain as much experience as possible in the profession of their choice. This may include volunteer activities, internships, shadowing practitioners in the field, or employment in a health care setting.

Actuarial studies: A plan of study is available for students interested a career in the actuarial sciences. Actuarial science is a discipline that applies mathematical and statistical methods to assess risk in the insurance, finance, and other industries. Course work provides a foundation for students who will work as actuaries and also prepares students to take the first actuarial exams. These courses may count for credit in any of the three major programs in the School of Mathematical Sciences, or may be taken independently.

General Science Exploration, Undeclared

http://www.rit.edu/cos/uds/main.html

Roger Dube, Program Director

Program overview

Many high school students are interested in the sciences, but may be undecided as to which major best meets their interests and career goals. The general science exploration program allows students to investigate various degree options before deciding on a program of study.

Curriculum

A customized schedule of courses in science and mathematics is developed for each student based on individual strengths, interests, and goals. During fall and winter quarters, students participate in an interdisciplinary first-year seminar, which includes a combination of academic support, career development, and science exploration activities. Along with a team of academic advisers, students will select courses that help them explore the traditional science options of biology, chemistry, physics, and math, as well as courses in the fields of environmental science, imaging science, or other areas of interest.

Students may choose a major at any time over the course of the academic year. Some students find the decision is easily made after only one quarter of course work. Others take advantage of a full year of exploration. Students in the general science exploration program are able to delay their choice of a major without losing time toward the completion of a degree.

General science exploration option, typical course sequence

COURSE	QTR. CR. HRS.
First Year	
Freshman Seminar	2
Mathematics or calculus sequence	10-12
Choice of two laboratory sciences:	
Biology	12
Chemistry	13
Physics	8-12
Imaging Science	6
Additional course choices:	4
Computer Science	4-8
Liberal Arts*	4-12
First-Year Enrichment	2
Wellness Education†	0
Total Credit Hours (each quarter)	**16-18**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

School of Biological and Medical Sciences

www.rit.edu/cos/biology/SBMS.php

Anne Houtman, Head

The School of Biological and Medical Sciences offers BS degrees in bioinformatics, biology, environmental science, and molecular bioscience and biotechnology. In addition to master of science degrees, the school offers accelerated dual degree programs (BS/MS) in bioinformatics or environmental science. The BS/MS programs may be completed in five years of study.

Bioinformatics, BS

http://www.bioinformatics.rit.edu/

Michael Osier, Program Director
(585) 475-4392, michael@bioinformatics.rit.edu

Program overview

Bioinformatics represents the marriage of biotechnology and the computing sciences. Bioinformaticists use computers to analyze, organize, and visualize biological data in ways that increase our

understanding of this data and lead to new discoveries. Graduates receiving the BS degree are well-qualified for many rewarding careers, including those in bioinformatics software development, biomedical research, biotechnology, comparative genomics, genomics, molecular imaging, pharmaceutical research and development, proteomics, and vaccine development.

The BS program in bioinformatics is a truly interdisciplinary degree and its curriculum was developed by faculty in the departments of biological sciences, chemistry, computer science, mathematics and statistics, and information technology, with the guidance of individuals in the bioinformatics and biotechnology industries. The program meets the needs of prospective employers in this challenging and rapidly changing field.

Requirements for the BS degree in bioinformatics

Students must meet the minimum graduation requirements of the university as described in this bulletin. In addition, the program requires successful completion of all the courses listed in the typical course schedule, plus one cooperative education experience.

Cooperative education

The bioinformatics degree requires the completion of one cooperative education experience. This experience permits the student to participate in applied bioinformatics, using current technologies to gain a practical perspective. More than 65 organizations in industry, government, and academia employ our students in short-term (10-20 week), full-time paid positions. Co-op positions can be held during the summer and/or the regular academic year. No tuition is charged for co-op participation. If a student elects to pursue co-op during the regular academic year, he or she will take the same number of academic class terms and may need to extend the date of graduation beyond the traditional four years.

Bioinformatics, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1001-200	Freshman Symposium	1
1001-251, 252, 253	Introduction to Biology I, II, III	12
1001-265	Unix Under the Hood	2
1001-260	Introduction to Bioinformatics	2
4003-241	Problem-Based Introduction to Computer Science	4
4003-242	Data Structure Problem Solving	4
1016-281, 282	Calculus I, II	8
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1001-311	Cell Biology	4
1001-350	Molecular Biology	4
1001-493	Bioinformatics	4
4003-243	Object-Oriented Programming	4
1011-215, 216	General and Analytical Chemistry I, II	7
1011-205, 206	Chemical Principles Lab I, II	2
1016-265, 366	Discrete Math I, II	8
1016-319	Data Analysis	4
	Liberal Arts*	12
Third and Fourth Years		
1001-404	Introduction to Microbiology	4
4002-462	Introduction to Bioinformatics Computing	4
1001-450	Genetic Engineering	5

COURSE		QTR. CR. HRS.
1001-421	Genetics	4
1001-492	Genomics	4
1001-494	Molecular Modeling and Proteomics	4
4002-563	Functional and Translational Bioinformatics	4
4003-531	Parallel Computing I	4
1009-502	Biochemistry: Conformation and Dynamics	3
1013-231	Organic Chemistry I	3
1013-235	Organic Chemistry Lab I	1
1009-503	Biochemistry: Metabolism	3
4002-360	Introduction to Databases and Data Modeling	4
4003-334	Computer Science 4	4
1016-415	Statistical Analysis for Bioinformatics	4
	Liberal Arts*	12
	University-wide Electives	18
1001-499	Cooperative Education (required)	Co-op
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

Accelerated dual degree option

The BS program may be combined with the MS program in bioinformatics, allowing undergraduate students to acquire both degrees in as few as five years. Undergraduate students with a minimum overall GPA of 3.2 may apply to the bioinformatics committee for entry before the completion of their third year of study. Students in the combined option are required to take graduate-level courses during their fourth year and complete an approved MS thesis during their final year of study.

Bioinformatics, BS/MS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1001-200	Freshman Symposium	1
1001-251, 252, 253	Introduction to Biology I, II, III	12
1001-265	Unix Under the Hood	2
1001-260	Introduction to Bioinformatics	2
4003-241	Problem-Based Introduction to Computer Science	4
4003-242	Data Structure Problem Solving	4
1016-281, 282	Calculus I, II	8
	Liberal Arts*	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1001-311	Cell Biology	4
1001-350	Molecular Biology	4
1001-493	Bioinformatics	4
4003-243	Object-Oriented Programming	4
1011-215, 216	General and Analytical Chemistry I, II	7
1011-205, 206	Chemical Principles Lab I, II	2
1016-265, 366	Discrete Math I, II	8
1016-319	Data Analysis	4
	Liberal Arts*	8
	University-wide Elective	4
Third Year		
1001-404	Introduction to Microbiology	4
4002-462	Introduction to Bioinformatics Computing	4
1001-450	Genetic Engineering	5
4002-563	Functional and Translational Bioinformatics	4
4002-360	Introduction to Databases and Data Modeling	4
1013-231	Organic Chemistry I	3
1013-235	Organic Chemistry I Lab	1
1016-415	Statistical Analysis for Bioinformatics	4
4003-334	Computer Science 4	4
	Liberal Arts*	8
	University-wide Electives	8
1001-499	Cooperative Education (required)	Co-op
Fourth Year		
1001-421	Genetics	4
1001-492	Genomics	4
1001-725	Ethics in Bioinformatics	3
1001-494	Molecular Modeling and Proteomics	4
4005-735	Parallel Computing I	4
1009-702, 703, 704	Biochemistry I, II, III	9
	Liberal Arts*	4
	University-wide Electives	8
Fifth Year		
Choose one of the following:		2
1001-759	Advanced Database Topics	
1001-722	Bioinformatics Seminar	
1001-890	Thesis	10
	Graduate Electives‡	22
Total Quarter Credit Hours		**223**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Graduate electives may be comprised of any graduate-level course in biological sciences, chemistry, mathematics and statistics, computer science, information technology, or business. These courses provide flexibility so that students can pursue a course of study consistent with their personal interests and professional goals.

Biology, BS

http://www.rit.edu/cos/biology/programs_degrees_BSBiology.html

Larry Buckley, Program Director
(585) 475-7507, ljbsbl@rit.edu

Program overview

The BS degree in biology prepares students for rewarding positions in occupations related to the life sciences, including: biomedical research, scientific management, science journalism, forensic science, ecology and environmental science, agriculture, genetic counseling, and education.

The program also includes all of the course work and support services to prepare students for entrance into schools of medicine, dentistry, veterinary medicine, optometry, podiatry, and chiropractic medicine.

Graduates are well-prepared to pursue a master's or doctoral degree in a wide variety of fields in the life sciences.

Curriculum

Requirements for the BS degree in biology

Students must meet the minimum graduation requirements of the university as described in this bulletin. In addition, the program requires successful completion of all courses listed in the typical course schedule.

Cooperative education

The biology degree curriculum provides opportunities for students to participate in our optional cooperative education program.

More than 65 organizations in private industry, government, and academia employ our students in short-term (10 to 20 weeks), full-time paid positions directly related to the students' academic areas of interest. Co-op positions can be held during the summer and/or during the regular academic year. No tuition is charged for any co-op participation. If a student elects to hold a co-op position during the regular academic year, he or she will take the same number of academic class quarters and may need to extend the date of graduation beyond the traditional four years.

Biology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1001-200	Freshman Symposium	1
1001-251, 252, 253	Introduction to Biology I, II, III	12
1011-215, 216, 217	General and Analytical Chemistry I, II, III	10
1011-205, 206	Chemical Principles Lab I, II	2
1011-227	General and Analytical Chemistry Lab	1
1016-214, 215	Elementary Calculus I, II	6
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1001-311	Cell Biology	4
1001-350	Molecular Biology	4
1001-365	Evolutionary Biology	4
1013-231, 232, 233	Organic Chemistry I, II, III	9
1013-235, 236, 237	Organic Chemistry Lab I, II, III	3
1016-319	Data Analysis I	4
	Biology Elective‡	4
	Liberal Arts*	12
Third/Fourth Years§		
1001-340	General Ecology	4
1001-413	Comparative Physiology	4
1001-421	Genetics	4
1001-422	Developmental Biology	4
1017-211, 212, 213	College Physics I, II, III	12
	Biology Electives‡	20
	Liberal Arts*	12
	General Education Courses	7
	University-wide Electives	23
1001-499	Cooperative Education (optional)§	Co-op
Total Quarter Credit Hours		**180**

* Please see Liberal Arts General Education Requirements for more information.

† Please see Wellness Education Requirement for more information.

‡ Biology electives: minimum of 12 quarter credits must be 400-level or above.

§ Students who elect to participate in the optional cooperative education program may be scheduling courses in a fifth year, but will use the same number of academic quarters to complete the degree.

Environmental Science, BS

http://www.rit.edu/cos/environmental/

Karl Korfmacher, Program Director
(585) 475-5554, kfksci@rit.edu

Program overview

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. The BS and BS/MS environmental science programs provide students with the education and experiences they need to be successful.

Curriculum

Environmental science concentration/track requirement

The practice of environmental science demands that students be well-rounded specialists. To accomplish this, each student is required to select an aspect of environmental science as a specialization. Students in the BS program are required to complete a minimum of 20 quarter credit hours in a specified concentration. The program director can assist students in selecting an appropriate concentration. The available concentrations are: digital imaging, environmental biology, environmental economics, environmental public policy, mathematics and statistics, and remote sensing. Students also may develop a self-designed concentration in an area of personal interest, subject to approval from an environmental science review committee.

Environmental science, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1001-200	Freshman Symposium	1
1001-251, 252, 253	Introduction to Biology I, II, III	12
1011-215, 216	General and Analytic Chemistry I, II	7
1011-205, 206	Chemistry Principles I, II Labs	2
Choose one of the following math sequences:		
1016-214, 215	Elementary Calculus I, II**	6
1016-281, 282, 283	Project-Based Calculus I, II, III	12
0508-460	Environment and Society	4
1006-202	Concepts in Environmental Science	4
	Liberal Arts*	4
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1006-203	Environmental Science Field Studies	4
1006-350	Applications of GIS	4
1011-202	Fundamentals of Organic Chemistry	3
1011-207	Introduction to Organic Chemistry Lab	1
Choose one of the following physics sequences:		12
1017-211, 212, 213	College Physics	
1017-311, 312, 313	University Physics	
1016-319, 320	Data Analysis I, II	10
0630-370, 372	Environmental Geology and Lab	4
	Liberal Arts*	12
Third Year		
1001-340	General Ecology	4
1001-475	Conservation Biology	4
1006-503	Capstone in Environmental Science	4
0508-463, 464	Great Lakes I, II	8
0630-380, 382	Introduction to Hydrology and Lab	4
	Environmental Science Concentration§	8
	Liberal Arts*	12
	General Education Elective‡	0-4
Fourth Year		
1051-420	Environmental Applications of Remote Sensing	4

COURSE		QTR. CR. HRS.
	Environmental Science Concentration§	12
	University-wide Electives	20
	Liberal Arts*	8
Total Quarter Credit Hours		**182-185**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Number of general education elective credits will depend on choice of calculus courses.
§ See environmental science concentrations. It is highly recommended that students, in consultation with their faculty adviser, take additional environmental science electives during the fourth year.
**Students selecting this sequence must complete an additional 3 credits in general education course work.

Accelerated dual degree option

Students in the environmental science program may choose the accelerated five-year BS/MS option, which provides them with a considerable advantage over other environmental science graduates in the job market. The curriculum was developed in conjunction with an advisory board of environmental leaders to ensure that students' education meets the current and future needs of the industry. In order to function as an environmental scientist, an individual must have an extensive background in mathematics, physical science, and life science. The BS/MS program is one of the strongest programs available with respect to mathematics and science.

Students must meet the minimum requirements of the university as described in this bulletin and the requirements contained in the program shown here or its equivalent, as determined and approved by the environmental science program director. Undergraduate students with an overall and professional field-of-study GPA of 3.0 or greater may apply to the program director for entry into the program.

Environmental science, BS/MS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1001-200	Freshman Symposium	1
1001-251, 252, 253	Introduction to Biology I, II, III	12
1011-215, 216	General and Analytic Chemistry I, II	7
1011-205, 206	Chemistry Principles Labs I, II	2
Choose one of the following math sequences:		
1016-214, 215	Elementary Calculus I, II**	6
1016-281, 282, 283	Project-Based Calculus I, II, III	12
0508-460	Environment and Society	4
1006-202	Concepts in Environmental Science	4
	Liberal Arts*	4
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1006-203	Environmental Science Field Studies	4
1006-350	Applications of GIS	4
1011-202	Fundamentals of Organic Chemistry	3
1011-207	Introduction to Organic Chemistry Lab	1
Choose one of the following physics sequences:		12
1017-211, 212, 213	College Physics	
1017-311, 312, 313	University Physics	
1016-319, 320	Data Analysis I, II	10
0630-370, 372	Environmental Geology and Lab	4
	Liberal Arts*	12
Third Year		

COURSE		QTR. CR. HRS.
1001-340	General Ecology	4
1001-475	Conservation Biology	4
1006-503	Capstone in Environmental Science	4
0508-463, 464	Great Lakes I, II	8
0630-380, 382	Introduction to Hydrology and Lab	4
	Environmental Science Concentration§	8
	Liberal Arts*	12
	General Education Elective‡	0–4
Fourth Year		
1006-711, 712, 713	Environmental Science Graduate Study I, II, III	5
1006-879	Environmental Science Graduate Research	3
1006-710	Graduate Readings Seminar	3
1015-720	Environmental Chemistry	3
1051-420	Environmental Applications of Remote Sensing	4
	Environmental Science Concentration§	4
	University-wide Electives (undergraduate)	12
	Liberal Arts*	8
Fifth Year		
1006-890	Thesis/Project/891	5-9
	Environmental Science Core Graduate Elective	4
	Environmental Public Policy Core Graduate Elective	4
	Environment and Society Core Graduate Elective	4
	Professional Electives	12-20
	Environmental Science Concentration§	8
	University-wide Electives (undergraduate)	4
Total Quarter Credit Hours		**233-236**

* Please see Liberal Arts General Education Requirements for more information
† Please see Wellness Education Requirement for more information.
‡ Number of general education elective credits will depend on choice of calculus courses.
§ Please see environmental science concentrations.
Note: The articulation of the BS and the MS curriculum is accomplished by the inclusion of 11 quarter credit hours of graduate work in the fourth year of the curriculum.
**Students selecting this sequence must complete an additional 3 credits in general education course work.

Additional information

Cooperative education

Although cooperative education is optional for environmental science majors, it offers students a great way to get a head start on their career with paid professional work experience. Students can participate in cooperative education as soon as the summer quarter of the second year. Co-op placements are typically with local, state, or federal government agencies, nonprofit environmental organizations, and a host of environmental consulting firms.

Employment opportunities

There is a great need for individuals who have both a strong background in environmental science and the ability to participate on 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.

Molecular Bioscience and Biotechnology, BS

http://www.rit.edu/cos/biology/programs_degrees_BSBiotechnology.html

Michael Savka, Program Director
(585) 475-5141, massbi@rit.edu

Program overview

The BS degree in molecular bioscience and biotechnology prepares students to immediately assume challenging positions in research, development, and management in biotechnology research. Students are also well-prepared for positions in the fields of plant biotechnology, human genetics, agriculture, food products, pharmaceuticals and vaccine development, environment and energy, forensic science, and genetic counseling.

The advanced nature of the third- and fourth-year courses, as well as the opportunity to participate in faculty-sponsored undergraduate research, provides a sound foundation to those graduates wishing to pursue a master's or doctoral degree.

The program also can be designed to include the education necessary for the pursuit of a career in a 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.

Curriculum

Requirements for the BS degree in molecular bioscience and biotechnology

Students must meet the minimum graduation requirements of the university, as described in this bulletin. In addition, the program requires successful completion of all of the courses listed in the following typical course schedule.

Cooperative education

This program provides students the option of participating in cooperative education. More than 65 organizations in industry, government, and academia employ our students in short-term (10 to 20 weeks), full-time paid positions directly related to students' academic areas of interest. Co-op positions can be held during the summer and/or during the regular academic year. Tuition is not charged while a student is on co-op. If a student elects to hold a co-op position during the regular academic year, he or she will take the same number of academic quarters and may need to extend the date of graduation beyond the traditional four years.

Molecular bioscience and biotechnology, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1001-200	Freshman Symposium	1
1001-251, 252, 253	Introduction to Biology I, II, III	12
1011-215, 216, 217	General and Analytical Chemistry I, II, III	10
1011-205, 206	Chemical Principles Lab I, II	2
1011-227	General and Analytical Chemistry Lab	1
1016-214, 215	Elementary Calculus I, II	6
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment	2

COURSE		QTR. CR. HRS.
	Wellness Education†	0
Second Year		
1001-311	Cell Biology	4
1001-312	Immunology	3
1001-314	Tissue Culture	5
1001-350	Molecular Biology	4
1013-231, 232, 233	Organic Chemistry I, II, III	9
1013-235, 236, 237	Organic Chemistry Lab I, II, III	3
1016-319	Data Analysis I	4
	Liberal Arts*	12
Third and Fourth Years‡		
1001-404	Introductory Microbiology	4
1001-421	Genetics	4
1008-312	Analytical Chemistry: Separations	3
1008-319	Analytical Chemistry: Separations Lab	1
1009-502	Biochemistry: Conformation and Dynamics	3
1009-503	Biochemistry: Metabolism	3
	Biotechnology Electives	24
	Liberal Arts*	12
	General Education Courses	9
	University-wide Electives	27
1001-499	Cooperative Education (optional)‡	Co-op
Total Quarter Credit Hours		**180**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.
‡If a student elects to participate in our co-op program, she or he may be scheduling courses in a fifth year but will be using the same number of academic quarters of classes to complete the degree.

Bioinformatics option

This BS degree includes a bioinformatics option. Bioinformatics is a developing field that represents a marriage between biotechnology and computer technologies. The field encompasses all aspects of the application of computer technologies to biological data. The option includes curriculum that features a combination of science and biotechnology courses with computer science courses to help students organize, link, analyze, and visualize complex sets of biological data.

Molecular bioscience and biotechnology, bioinformatics option, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1001-200	Freshman Symposium	1
1001-251, 252, 253	Introduction to Biology I, II, III	12
1011-215, 216, 217	General and Analytical Chemistry I, II, III	10
1011-205, 206	Chemical Principles Lab I, II	2
1011-227	General and Analytical Chemistry Lab	1
4003-231, 232	Computer Science 1, 2	8
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1016-214, 215	Elementary Calculus I, II	6
1001-311	Cell Biology	4
1001-350	Molecular Biology	4
1001-312	Immunology	3
1001-314	Tissue Culture	5
4003-233	Computer Science 3	4
1013-231, 232, 233	Organic Chemistry Lecture I, II, III	9
1013-235, 236, 237	Organic Chemistry Lab I, II, III	3
	Liberal Arts*	8

COURSE		QTR. CR. HRS.
Third and Fourth Years‡		
1001-404	Introduction to Microbiology	4
1001-421	Genetics	4
1001-492	Genomics	4
1001-493	Bioinformatics	4
1001-450	Genetic Engineering	5
	Biotechnology Electives	12
1008-312, 319	Analytical Chemical Separations	4
1009-502	Biochemistry: Confirmation and Dynamics	3
1009-503	Biochemistry: Metabolism	3
4002-360	Introduction to Databases and Data Modeling	4
4003-334	Computer Science 4	4
1016-319	Data Analysis	4
	Liberal Arts*	16
	University-wide Electives	13
1001-499	Cooperative Education (optional)‡	Co-op
Total Quarter Credit Hours		**180**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.
‡If a student elects to participate in our co-op program, she or he may be scheduling courses in a fifth year but will be using the same number of academic quarters of classes to complete the degree.

Concentrations/Electives

Below are upper-division elective courses suggested for students interested in certain sub-disciplines of agriculture/plant, environmental, industrial, and medical biotechnology. Students may select courses from any suggested concentrations.

Concentrations

Agricultural/Plant

1001-416	Plant Biotechnology
1001-418	Plant Molecular Biology
1001-492	Genomics
1001-450	Genetic Engineering
1001-405	Plants, Medicine, and Technology
1001-559	Special Topics*

*Special topics may include the following: Plant Pathology, Fundamentals of Plant Biochemistry, and Bio-Separations: Principles and Practices.

Environmental

1001-567	Environmental Microbiology
1001-530	Bioremediation
1001-418	Plant Molecular Biology
1001-559	Special Topics*

*Special topics may include the following: Plant Pathology.

Industrial

1001-530	Bioremediation
1001-492	Genomics
1001-416	Plant Biotechnology
1001-315	Hybridoma Techniques
1001-450	Genetic Engineering
1001-403	Cell Physiology
1001-405	Plants, Medicine, and Technology

Medical

1001-312	Immunology
1001-525	Eukaryotic Gene Expression
1001-406	Virology
1001-422	Developmental Biology

1001-451	Introduction to Infectious Disease
1001-715	Genetic Diseases and Disorders
1004-315	Medical Genetics
1001-315	Hybridoma Techniques
1001-502	Advanced Immunology
1001-427	Microbial and Viral Genetics
1001-492	Genomics
1001-559	Special Topics*

*Special topics courses include the following: Cancer Biology, Infectious Disease: Impact on Society and Culture, Medical Parasitology, and Bacterial-Host Interactions.

School of Mathematical Sciences

Douglas Meadows, Head

www.math.rit.edu

The School of Mathematical Sciences has programs leading to BS degrees in applied mathematics, computational mathematics, and applied statistics. Its graduate program leads to an MS degree in applied and computational mathematics. The school also offers students a number of five-year accelerated dual degree (BS/MS) programs.

The small student-to-faculty ratio fosters many opportunities for students and faculty to engage in undergraduate research. These often lead to external opportunities, and sometimes to joint publications between students and faculty. Students have been successful in National Science Foundation summer research programs around the country and some have sought and gained acceptance into prestigious international programs.

Owing to problem-solving skills that a degree in mathematics or statistics cultivates, students find exciting career paths open to them. Many find work in industry or government, in areas as diverse as actuarial science, mathematical modeling, software design, and cryptography, to name just a very few. Others find success pursuing graduate work and further research, leading to opportunities in academia, industry, and government.

Applied Mathematics, BS

http://www.math.rit.edu/

Douglas Meadows, Head, School of Mathematical Sciences
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Program overview

The applied mathematics program 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. Students choose a sequence of courses from one of more than 20 application areas that provide them with the knowledge and skills to collaborate on complex problems with scientists, engineers, computer specialists, or other analysts. Some application areas are 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.

Applied mathematics students who minor in business can earn the MBA degree from RIT with one year of additional study through careful choice of undergraduate courses.

Curriculum

Applied mathematics, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1016-210, 211	Mathematics and Statistics Seminar	2
1016-281, 282, 283	Project-Based Calculus I, II, III	12
1016-265	Discrete Math I	4
	Science Electives	12
	Liberal Arts*	16
0502-444	Technical Writing	4
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1016-305	Multivariable Calculus	4
1016-306	Differential Equations I	4
1016-351	Probability	4
1016-352	Applied Statistics	4
1016-399	Cooperative Education Seminar	0
	Mathematics Elective	4
1016-331	Linear Algebra I	4
	Liberal Arts*	8
Choose one of the following computer science options:		8
4003-241	Computer Science Option 1 4003-212 and 4003-241	
4003-242	Computer Science Option 2 4003-241 and 4003-242	
1016-410	Vector Calculus	4
	University-wide Electives	10
Third Year		
Choose one of the following courses:		4
1016-511	Numerical Analysis	
1016-512	Numerical Linear Algebra	
1016-432	Linear Algebra II	4
1016-461	Mathematical Modeling	4
	Mathematics Electives	8
	Liberal Arts*	12
	General Education Electives	8-12
1016-499	Cooperative Education (optional)‡	Co-op
Fourth Year		
1016-411, 412	Real Variables I, II	8
	Mathematics Electives	4
	Application Area	4
	General Education Electives	10
1016-499	Cooperative Education (optional)‡	Co-op
Fifth Year		
1016-531, 532	Abstract Algebra I, II	8
	Application Area	8
1016-499	Cooperative Education (optional)	Co-op
Total Quarter Credit Hours		**188**

* Please see Liberal Arts General Education Requirements for more information.

† Please see Wellness Education Requirement for more information.

‡ This program can be completed in four years if the cooperative education option is omitted.

Applied Statistics, BS

http://www.math.rit.edu/

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Program overview

The applied statistics program provides students with a solid foundation in mathematical and statistical principles, experience in the application of statistics, thorough knowledge of computers and statistical software, and the skills to communicate the results of a statistical analysis. The demand for graduates with this type of preparation is precipitated by the recognition of business, industry, and government that a large number of problems can be analyzed

Graduates of the program collaborate with specialists in both scientific and non-technical areas to design and conduct experiments and interpret the results. Application areas include product designs, quality control, marketing, customer satisfaction, and actuarial sciences.

Curriculum

Applied statistics, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1016-210, 211	Mathematics and Statistics Seminar	2
1016-281, 282, 283	Project-Based Calculus I, II, III	12
1016-265	Discrete Math I	4
1016-260	Statistical Computing with Excel and Minitab	2
4003-241	Computer Science Option: 4003-212 or 4003-241	4
	Science Electives	12
	University-wide Electives	2
	Liberal Arts*	8
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1016-351	Probability	4
1016-352	Applied Statistics	4
1016-399	Co-op Seminar	0
	Mathematics Elective†	4
0307-442	Statistical Computing	4
1016-331	Linear Algebra I	4
Choose one of the following courses:		4
1016-358	Statistical Quality Control	
1016-457	Research Sampling Techniques	
0502-444	Technical Writing	4
	Liberal Arts*	16
Third Year		
1016-432	Linear Algebra II	4
1016-354	Regression Analysis	4
1016-355	Design of Experiments	4
	Mathematics Elective†	4
	Liberal Arts*	8
	General Education Electives	8
1016-499	Cooperative Education (optional)§	Co-op

COURSE		QTR. CR. HRS.
Fourth Year		
1016-454	Nonparametric Statistics	4
	Mathematics Electives†	12
	University-wide Electives	6
	General Education Electives	6
	Liberal Arts*	4
1016-499	Cooperative Education (optional)§	Co-op
Fifth Year		
1016-451, 452	Mathematical Statistics I, II	8
1016-555	Statistics Seminar	4
	Mathematics Elective‡	4
	General Education Electives	8-12
1016-499	Cooperative Education (optional)§	Co-op
Total Quarter Credit Hours		**188**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Up to 16 quarter credits of mathematics electives may be chosen from the applied mathematics application areas.
§ This program can be completed in four years if the cooperative education option is omitted.

Accelerated dual degree option

Students may be interested in combining the BS in applied statistics with an MS in applied and computational mathematics for an accelerated option that allows them to earn both degrees following one year of graduate study. A BS in applied statistics and an MS in quality and applied statistics may also be earned through a dual degree option.

Computational Mathematics, BS

http://www.math.rit.edu/

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Program overview

Computational mathematics prepares students for a mathematical career that incorporates extensive computer science skills. In this program, much emphasis is given to the use of the computer as a tool to solve mathematically modeled physical problems. Graduates of the program often choose positions as mathematical analysts, scientific programmers, software engineers, or systems analysts. Job opportunities in private industry and government abound in this field.

Curriculum

Computational mathematics, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1016-210, 211	Mathematics and Statistics Seminar	2
1016-281, 282, 283	Project-Based Calculus I, II, III	12
1016-265	Discrete Math I	4
4003-241	Problem-Based Introduction to Computer Science	4
4003-242	Data Structures for Problem Solving	4
4003-243	Object-Oriented Programming	4
	Science Electives	12
	Liberal Arts*	8
1105-051, 052	First-Year Enrichment	2

COURSE		QTR. CR. HRS.
	Wellness Education†	0
Second Year		
1016-305	Multivariable Calculus	4
1016-306	Differential Equations I	4
1016-351	Probability	4
1016-352	Applied Statistics	4
1016-399	Co-op Seminar	0
1016-331	Linear Algebra I	4
4003-334	Computer Science 4	4
3010-361	Software Engineering	4
0502-444	Technical Writing	4
	Computational Math Concentration	4
	University-wide Elective	4
	Liberal Arts*	12
Third Year		
1016-432	Linear Algebra II	4
1016-467	Graph Theory	4
1016-461	Mathematical Modeling	4
	Computational Math Concentration	8
	University-wide Elective	4
	Liberal Arts*	4
1016-499	Cooperative Education (optional)	Co-op
Fourth Year		
1016-411	Real Variables I	4
1016-511	Numerical Analysis	4
1016-512	Numerical Linear Algebra	4
	Computational Math Concentration	4
	University-wide Elective	2
	General Education Electives	8
	Liberal Arts*	12
1016-499	Cooperative Education (optional)	Co-op
Fifth Year‡		
1016-531, 532	Abstract Algebra I, II	8
	Computational Math Concentration	4
	General Education Electives	6
1016-499	Cooperative Education (optional)	Co-op
Total Quarter Credit Hours		**188**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ This program can be completed in four years if the cooperative education option is omitted.

Accelerated dual degree option

Students may be interested in combining the BS in computational mathematics with an MS in applied and computational mathematics for an accelerated option that allows them to earn both degrees following one year of graduate study. A BS in computational mathematics and an MS in computer science may also be earned through a dual degree option.

Department of Chemistry

L. Paul Rosenberg, Department Head

www.rit.edu/cos/chemistry/

The department of chemistry offers programs leading to BS degrees in chemistry, a BS degree in biochemistry, and a BS degree in polymer chemistry. The department also offers graduate and accelerated dual degree programs in the following areas: MS degree and a five-year combined BS/MS in chemistry, BS biochemistry/MS chemistry, and a BS chemistry/MS materials science and engineering.

Chemistry, BS

http://chemistry.rit.edu/

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Program overview

The BS degree in chemistry may be completed in four or five years, depending on the amount of cooperative education experience the student elects. Co-op may begin as early as the summer of the first year. The five-year course schedule assumes that the student will participate in co-op assignments for a total of eight academic quarters. Students may elect to complete the BS degree requirements in a traditional four-year program with three summers of co-op work experience.

The program prepares graduates 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 graduates continue their education and earn advanced degrees in chemistry or pursue careers in pharmacy, medicine, and dentistry.

The chemistry program allows for flexibility in the type and number of chemistry and university-wide elective courses taken by the student. The program also provides students with the option of planning an elective concentration in complementary fields such as imaging science, business, graphic arts, psychology, biology, criminal justice, computer science, engineering, environmental science, forensics, mathematics, packaging science, physics, and printing.

Curriculum

Chemistry (ACS certified), BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1010-200	Chemical Safety	1
1010-230	Introduction to Cooperative Education and Chemical Careers	1
1010-251, 252	General Chemistry I, II	7
1010-255	General Chemistry I Lab	1
1008-261, 262	Quantitative Analysis I, II	7
1008-265, 266	Quantitative Analysis Lab I, II	3
1016-281, 282, 283	Calculus I, II, III	12
	Liberal Arts*	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
1010-499	Cooperative Education (optional, summer)	Co-op
Second Year		
1008-311	Instrumental Analysis	3
1008-318	Instrumental Analysis Lab	1
1008-312	Separations Techniques	3
1008-319	Separations Techniques Lab	1
1016-305	Multivariable Calculus	4
1013-431, 432, 433	Organic Chemistry I, II, III	9
1013-435, 436	Preparative Organic Chemistry Lab I, II	2
1013-437	Systematic Identification of Organic Compounds III Lab	2
	Liberal Arts*	8
1010-499	Cooperative Education (optional)	Co-op

COURSE		QTR. CR. HRS.
Third Year		
1016-306	Differential Equations	4
1017-311, 312, 313	University Physics I, II, III	12
1014-441	Chemical Thermodynamics	4
1014-445	Chemical Thermodynamics Lab	1
	Liberal Arts*§	12
1010-499	Cooperative Education (optional)	Co-op
Fourth Year		
1014-442	Quantum Chemistry	4
1014-446	Quantum Chemistry Lab	1
1014-443	Chemical Kinetics	4
1014-447	Chemical Kinetics Lab	1
1010-401	Chemical Literature	2
1012-562, 563	Inorganic Chemistry I, II**	8
1009-502	Biochemistry**	3
	University-wide Electives‡	
1010-499	Cooperative Education (optional)	Co-op
Fifth Year		
1012-565	Preparative Inorganic Chemistry Lab**	3
1008-511	Advanced Instrumental Analysis**	3
1008-621	Advanced Instrumental Analysis Lab**	2
	Chemistry Electives§	
	University-wide Electives‡	
1010-499	Cooperative Education (optional)	Co-op
Total Quarter Credit Hours		**182**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.
‡Chemistry Research (1010-541, 542, 543) may be used as a university-wide elective and is highly recommended. Electives are necessary to bring the total quarter credit hours to 180 for graduation. Twelve quarter credit hours are necessary for full-time status.
§ACS highly recommends a foreign language (preferably German).
**Required only for ACS certification.

Accelerated dual degree options

The BS chemistry program may be combined with the MS chemistry program or the MS in materials science and engineering program, allowing undergraduate students to acquire both a bachelor's and a master's degree in a total of five years. There are two BS/MS options:

- BS chemistry/MS chemistry
- BS chemistry/MS materials science and engineering

BS Chemistry (environmental chemistry option) (ACS certified)/MS Chemistry option

THIS OPTION HAS BEEN SUSPENDED
FOR THE 2011-2012 ACADEMIC YEAR.

The environmental chemistry option in the BS chemistry program requires the following courses: General Biology and Lab (1001-201, 1001-205), Microbiology (1004-210), Environmental Chemistry (1015-520), Atmospheric Chemistry (1015-521), and Aquatic Toxicology and Chemistry (1015-522) in place of chemistry electives, university-wide electives, and Inorganic Chemistry II. The environmental studies concentration is recommended as part of the liberal arts upper-level electives.

In addition, environmentally related science courses may be selected according to the student's interests in areas such as field biology, ecology, oceanography, hydrology, environmental monitoring, geology, treatment of waste and sewage, packaging, polymer technology, and chemical research.

Chemistry, combined BS (environmental chemistry option)/MS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1010-200	Chemical Safety	1
1010-230	Introduction to Cooperative Education and Chemical Careers	1
1010-251, 252	General Chemistry I, II	7
1010-255	General Chemistry I Lab	1
1008-261, 262	Quantitative Analysis I, II	7
1008-265, 266	Quantitative Analysis Lab I, II	3
1016-281, 282, 283	Calculus I, II, III	12
	Liberal Arts*	12
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
1001-201	General Biology	3
1001-205	General Biology Lab	1
1010-499	Cooperative Education (optional, summer)	Co-op
Second Year		
1008-311	Instrumental Analysis	3
1008-318	Instrumental Analysis Lab	1
1008-312	Separations Techniques	3
1008-319	Separations Techniques Lab	1
1016-305	Multivariable Calculus	4
1013-431, 432, 433	Organic Chemistry I, II, III	9
1013-435, 436	Preparative Organic Chemistry Lab I, II	2
1013-437	Systematic Identification of Organic Compounds Lab	2
1004-210	Microbiology in Health and Disease	4
	Liberal Arts*	12
1010-499	Cooperative Education (optional, summer)	Co-op
Third Year		
	Liberal Arts*‡	12
1016-306	Differential Equations	4
1008-511	Advanced Instrumental Analysis	3
1008-621	Advanced Instrumental Analysis Lab	2
1017-311, 312, 313	University Physics I, II, III	12
1015-522	Aquatic Toxicology and Chemistry	3
1010-499	Cooperative Education (optional, summer)	Co-op
Fourth Year		
1009-702	Biochemistry	3
1014-441	Chemical Thermodynamics	4
1014-445	Chemical Thermodynamics Lab	1
1014-442	Quantum Chemistry	4
1014-446	Quantum Chemistry Lab	1
1014-443	Chemical Kinetics	4
1014-447	Chemical Kinetics Lab	1
1015-720	Environmental Chemistry	3
1012-562	Inorganic Chemistry I	4
1012-565	Preparative Inorganic Chemistry Lab	3
	Chemistry Electives§‡	
1010-879	Research and Thesis Guidance**	3
1010-401	Chemical Literature	2
Fifth Year††		
1015-721	Atmospheric Chemistry	3
1010-870	Chemistry Seminar	2
1010-879	Research and Thesis Guidance**	6–13
Total Quarter Credit Hours		**225**

*Please see Liberal Arts General Education Requirements for more information. Environmental studies concentration is recommended.
†Please see Wellness Education Requirement for more information.
‡ACS (American Chemical Society) highly recommends a foreign language (preferably German).
§ A minimum of 36 hours of 700–level or higher chemistry courses is required to graduate with both a BS and MS degree.

**A student will be required to have 9 to 16 credit hours of Research and Thesis Guidance (1010-879).
††Course work in this year will be determined by the graduate committee and will need to fulfill the requirement of 225 credit hours.

BS chemistry/MS chemistry option

Chemistry, combined BS/MS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1010-200	Chemical Safety	1
1010-230	Introduction to Cooperative Education and Chemical Careers	1
1010-251, 252	General Chemistry I, II	7
1010-255	General Chemistry I Lab	1
1008-261, 262	Quantitative Analysis I, II	7
1008-265, 266	Quantitative Analysis Lab I, II	3
1016-281, 282, 283	Calculus I, II, III	12
	Liberal Arts*	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
1010-499	Cooperative Education (optional, summer)	Co-op
Second Year		
1008-311	Instrumental Analysis	3
1008-318	Instrumental Analysis Lab	1
1008-312	Separations Techniques	3
1008-319	Separations Techniques Lab	1
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1013-431, 432, 433	Organic Chemistry I, II, III	9
1013-435, 436	Preparative Organic Chemistry Lab I, II	2
1013-437	Systematic Identification of Organic Compounds III Lab	2
	Liberal Arts*	8
1010-499	Cooperative Education (optional, summer)	Co-op
Third Year		
1010-401	Chemical Literature	2
1017-311, 312, 313	University Physics I, II, III	12
1014-441	Chemical Thermodynamics	4
1014-445	Chemical Thermodynamics Lab	1
	Liberal Arts*‡	12
	Chemistry Electives§	
1010-499	Cooperative Education (optional, summer)	Co-op
Fourth Year		
1014-442	Quantum Chemistry	4
1014-446	Quantum Chemistry Lab	1
1014-443	Chemical Kinetics	4
1014-447	Chemical Kinetics Lab	1
1009-702	Biochemistry††	3
1008-711	Advanced Instrumental Analysis††	3
1008-621	Advanced Instrumental Analysis Lab††	2
1012-562, 563	Inorganic Chemistry I, II††	8
1012-765	Preparative Inorganic Chemistry Lab††	3
	Chemistry Electives§	
1010-879	Research and Thesis Guidance**	3
Fifth Year§§		
1012-870	Chemistry Seminar	2
1010-879	Research and Thesis Guidance**	6–13
Total Quarter Credit Hours		**225**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.
‡ACS highly recommends a foreign language (preferably German).
§ A minimum of 6 to 8 quarter credit hours of 500-level course work.
§§ Course work in the fifth year will be determined by the graduate committee and will need to fulfill the requirement of 225 total credit hours. A minimum of 36 hours of 700-level or higher chemistry courses is required to graduate with a BS and MS degree in chemistry.
**A student will normally have 9 to 16 credit hours of Research and Thesis Guidance.
†† Required only for ACS certification.

BS Chemistry/MS materials science and engineering option

The combined BS chemistry/MS materials science and engineering option is designed for students who wish to enter industrial applications of chemistry in the areas of developing new materials (polymers, plastics, natural product substitutes), new processes for producing those materials, and research into new applications for existing materials.

Chemistry, BS/MS materials science and engineering degree option, typical course sequence (BS is ACS certified)

COURSE		QTR. CR. HRS.
First Year		
1010-200	Chemical Safety	1
1010-230	Introduction to Cooperative Education and Chemical Careers	1
1010-251, 252	General Chemistry I, II	7
1010-255	General Chemistry I Lab	1
1008-261, 262	Quantitative Analysis I, II	7
1008-265, 266	Quantitative Analysis Lab I, II	3
1016-281, 282, 283	Calculus I, II, III	12
	Liberal Arts*	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
1010-499	Cooperative Education (optional, summer)	Co-op
Second Year		
1008-311	Instrumental Analysis	3
1008-318	Instrumental Analysis Lab	1
1008-312	Separations Techniques	3
1008-319	Separations Techniques Lab	1
1013-431, 432, 433	Organic Chemistry I	9
1013-435, 436	Preparative Organic Chemistry Lab I, II	2
1013-437	Systematic Identification of Organic Compounds Lab	2
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1017-311, 312, 313	University Physics I, II, III	12
	Liberal Arts*‡	4
1010-499	Cooperative Education (optional, summer)	Co-op
Third Year		
1010-401	Chemical Literature	2
1014-441	Chemical Thermodynamics	4
1014-445	Chemical Thermodynamics Lab	1
1014-442	Quantum Chemistry	4
1014-446	Quantum Chemistry Lab	1
1014-443	Chemical Kinetics	4
1014-447	Chemical Kinetics Lab	1
	Liberal Arts*‡	16
	University-wide elective	4
1010-499	Cooperative Education (optional, summer)	Co-op
Fourth Year		
1008-511	Advanced Instrumental Analysis (or 711)**	3
1008-621	Advanced Instrumental Analysis Lab**	2
1009-502	Biochemistry: Conformation and Dynamics**	3
1012-562, 563	Inorganic Chemistry I, II**	8
1012-565	Preparative Inorganic Chemistry Lab**	3
	Advanced Chemistry Electives§	
1028-701	Introduction to Materials Science	4
1028-702	Introduction to Polymer Science	4
1028-705	Introduction to Experimental Techniques	4
1028-879	Research and Thesis Guidance††	
	Materials Science Electives§	

COURSE		QTR. CR. HRS.
Fifth Year		
1015-721	Atmospheric Chemistry	3
1028-703	Solid State Science	4
1028-704	Introduction to Theoretical Methods	4
1028-710	Materials Properties and Selection	4
1028-780	Sensors and Actuators	4
1028-785	Sensors and Actuators Lab	2
	Materials Science Electives§	
1028-879	Research and Thesis Guidance††	
1028-890	Seminar	1
Total Quarter Credit Hours		**185**

*Please see Liberal Arts General Education Requirements for more information.
†Please see Wellness Education Requirement for more information.
‡ACS highly recommends a foreign language (preferably German).
§A minimum of 36 hours of 700–level or higher chemistry/materials science courses is required to graduate with both a BS and MS degree.
**Required only for ACS certification.
††A student will be required to have 9 to 16 credit hours of Research and Thesis Guidance (1028-879).

Biochemistry, BS

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Program overview

Biochemistry is an exciting variation of the BS chemistry program and may be completed in four or five years, depending on the amount of cooperative education. Co-op may begin as early as the summer of the first year. Students who enroll in the program often have an interest in combining the life and health sciences with a chemistry degree. Students take a year of general biology, in addition to a typical chemistry curriculum, during the first two or three years. During the upper-level years, students in the biochemistry program take a substantial core of courses in biochemistry, physical chemistry, chemical literature, and the liberal arts as well as elective courses in biology, biotechnology, and clinical science. Students must take a minimum of two upper-division biology electives.

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, dentistry, and veterinary medicine.

Curriculum

The biochemistry program offers two tracks, one that follows the guidelines of the American Society of Biochemists and Molecular Biologists (ASBMB) and one that is certified by the American Chemical Society (ACS). The ASBMB program allows more science and university-wide electives in such fields as biology, while the ACS program is for students interested in a graduate chemistry program such as that offered by RIT.

Biochemistry, BS degree, typical course sequence (follows ASBMB guidelines)

COURSE		QTR. CR. HRS.
First Year		
1010-200	Chemical Safety	1
1010-230	Freshman Symposium	1
1010-251, 252	General Chemistry I, II	7

COURSE		QTR. CR. HRS.
1010-255	General Chemistry I Lab	1
1008-261, 262	Quantitative Analysis I, II	7
1008-265, 266	Quantitative Analysis Lab I, II	3
1016-281, 282, 283	Calculus I, II, III	12
1001-201, 202, 203	General Biology	9
1001-205, 206, 207	General Biology Lab	3
	Liberal Arts*	4
1105-051, 052	First-Year Enrichment	2
	Wellness Education‡	0
1010-499	Cooperative Education (optional, summer)	Co-op
Second Year		
1010-401	Chemical Literature	2
1016-305	Multivariable Calculus	4
1013-431, 432, 433	Organic Chemistry I, II, III	9
1013-435, 436	Preparative Organic Chemistry Lab I, II	2
1013-437	Systematic Identification of Organic Compounds III Lab	2
1001-322	Cell Biology	4
1001-350	Molecular Biology	4
1009-502	Biochemistry: Conformation and Dynamics	3
	Biology Elective	4
	Liberal Arts*	12
	University-wide Electives§	
1010-499	Cooperative Education (optional)	Co-op
Third Year		
1008-311	Instrumental Analysis	3
1008-318	Instrumental Analysis Lab	1
1009-503	Biochemistry: Metabolism	3
1009-504	Biochemistry: Nucleic Acids	3
1009-505	Biochemistry: Experimental Techniques Lab	2
Choose one of the following physics sequences:		12
1017-311, 312, 313	University Physics I, II, III	
1017-211, 212, 213	College Physics I, II, III	
	Biology Elective	4
	Liberal Arts*	12
	University-wide Electives§	
1010-499	Cooperative Education (optional)	Co-op
Fourth Year		
1014-441	Chemical Thermodynamics	4
1014-445	Chemical Thermodynamics Lab	1
1014-443	Chemical Kinetics	4
1014-447	Chemical Kinetics Lab	1
	Liberal Arts*	8
	University-wide Electives§	
1010-499	Cooperative Education (optional)	Co-op
Total Quarter Credit Hours		**183**

* Please see Liberal Arts General Education Requirements for more information.
‡ Please see Wellness Education Requirement for more information.
§ Biochemistry Research (1009-541, 542, 543) may be used as a science elective and is highly recommended. Two electives must be upper-division biology courses (300 or higher) that include laboratory, for a minimum of eight credit hours. Electives are necessary to bring the total quarter credit hours to 183 for graduation.

Biochemistry, BS degree, typical course sequence (ACS certified)

COURSE		QTR. CR. HRS.
First Year		
1010-200	Chemical Safety	1
1010-230	Freshman Symposium	1
1010-251, 252	General Chemistry I, II	7
1010-255	General Chemistry I Lab	1

COURSE		QTR. CR. HRS.
1008-261, 262	Quantitative Analysis I, II	7
1008-265, 266	Quantitative Analysis Lab I, II	3
1016-281, 282, 283	Calculus I, II, III	12
1001-201, 202, 203	General Biology I, II, III	9
1001-205, 206, 207	General Biology Lab	3
	Liberal Arts*	4
1105-051, 052	First-Year Enrichment	2
	Wellness Education‡	0
1010-499	Cooperative Education (optional, summer)	Co-op
Second Year		
1010-401	Chemical Literature	2
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1013-431, 432, 433	Organic Chemistry I, II, III	9
1013-435, 436	Preparative Organic Chemistry Lab I, II	2
1013-437	Systematic Identification of Organic Compounds III Lab	2
1001-322	Cell Biology	4
1001-350	Molecular Biology	4
1009-502	Biochemistry: Conformation and Dynamics	3
	Biology Elective	4
	Liberal Arts*	8
	University-wide Electives§	
1010-499	Cooperative Education (optional)	Co-op
Third Year		
1008-311	Instrumental Analysis	3
1008-318	Instrumental Analysis Lab	1
1009-503	Biochemistry: Metabolism	3
1009-504	Biochemistry: Nucleic Acids	3
1009-505	Biochemistry: Experimental Techniques Lab	2
Choose one of the following physics sequences:		12
1017-311, 312,313	University Physics I, II, III	
1017-211, 212, 213	College Physics I, II, III	
	Biology Elective	4
	Liberal Arts*	12
1010-499	Cooperative Education (optional)	Co-op
Fourth Year		
1014-441	Chemical Thermodynamics	4
1014-445	Chemical Thermodynamics Lab	1
1014-442	Quantum Chemistry	4
1014-446	Quantum Chemistry Lab	1
1014-443	Chemical Kinetics	4
1014-447	Chemical Kinetics Lab	1
1012-562	Inorganic Chemistry I	4
1011-565	Preparative Inorganic Chemistry Lab	3
	Liberal Arts*	12
1010-499	Cooperative Education (optional)	Co-op
Total Quarter Credit Hours		**183**

* Please See Liberal Arts General Education Requirements for more information. ACS certification recommends a foreign language (preferably German).
‡ Please see Wellness Education Requirement for more information.
§ Biochemistry Research (1009-541, 542, 543) may be used as a science elective and is highly recommended. Two electives must be upper-division biology courses (300 or higher) that include laboratory, for a minimum of eight credit hours. Electives are necessary to bring the total quarter credit hours to 183 for graduation.

Accelerated dual degree option

Either of the BS chemistry programs may be combined with the MS chemistry program, allowing students to acquire both degrees in a total of five years.

Biochemistry, combined BS/MS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1010-200	Chemical Safety	1
1010-230	Freshman Symposium	1
1010-251, 252	General Chemistry I, II	7
1010-255	General Chemistry Lab	1
1008-261, 262	Quantitative Analysis I, II	7
1008-265, 266	Quantitative Analysis Lab I, II	3
1016-281, 282, 283	Calculus I, II, III	12
1001-201, 202, 203	General Biology I, II, III	9
1001-205, 206, 207	General Biology Lab	3
	Liberal Arts*	4
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
1010-499	Cooperative Education (optional, summer)	Co-op
Second Year		
1008-311	Instrumental Analysis	3
1008-318	Instrumental Analysis Lab	1
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1013-431, 432, 433	Organic Chemistry I, II, III	9
1013-435, 436	Preparative Organic Chemistry Lab I, II	2
1013-437	Systematic Identification of Organic Compounds III Lab	2
1017-311, 312, 313	University Physics I, II, III	12
	Liberal Arts*	16
1010-499	Cooperative Education (optional, summer)	Co-op
Third Year		
1014-441	Chemical Thermodynamics	4
1014-445	Chemical Thermodynamics Lab	1
1010-401	Chemical Literature	2
1014-442	Quantum Chemistry	4
1014-446	Quantum Chemistry Lab	1
1014-443	Chemical Kinetics	4
1014-447	Chemical Kinetics Lab	1
	Liberal Arts*	16
1010-499	Cooperative Education (optional, summer)	Co-op
Fourth Year		
1009-702	Biochemistry	3
1012-562	Inorganic Chemistry I	4
1008-711	Advanced Instrumental Analysis	3
1011-765	Preparative Inorganic Chemistry Lab	3
1009-703	Biochemistry: Metabolism	3
1009-704	Biochemistry: Nucleic Acids	3
1009-705	Biochemistry: Experimental Techniques Lab	3
	Biology Electives**	
	Chemistry Electives§	
1010-879	Research and Thesis Guidance#	
Fifth Year		
1010-870	Chemistry Seminar	2
1008-621	Advanced Instrumental Analysis Lab	2
1013-737	Advanced Organic Chemistry	4
1014-743	Advanced Physical Chemistry 1014-741 or	4
	Chemistry Electives§	
1010-879	Research and Thesis Guidance††	
Total Quarter Credit Hours		**225**

* Please see Liberal Arts General Education Requirements for more information. ACS certification recommends a foreign language (preferably German).
† Please see Wellness Education Requirement for more information.
§ A minimum of 36 hours of 700-level or higher chemistry courses is required to graduate with a BS and MS degree.

** Two upper-division biology electives with laboratory. Biology electives may be Cell Biology (1001-311), Molecular Biology (1001-350), Genetics (1001-421), or Genetic Engineering (1001-450).
†† A student will be required to have 9 to 16 hours of Research and Thesis Guidance (1010-879).

Polymer Chemistry, BS

http://chemistry.rit.edu/

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ADMISSION TO THIS PROGRAM HAS BEEN SUSPENDED FOR THE 2011-2012 ACADEMIC YEAR.

Program overview

Polymer science is an increasingly important area of modern science. When the MS program includes the Preparative Inorganic Chemistry Lab (1012-765), the curriculum meets the requirements for approval by the Committee on Professional Training of the American Chemical Society. The program is one of a handful in the nation and provides students with a solid background in the traditional areas of chemistry (general, analytical, organic, physical, and inorganic) supplemented with advanced courses and intensive laboratory experiences in polymer science. The polymer program may be completed in four or five years, depending on the number of cooperative education blocks, which may begin as early as the summer of the first year. It is highly recommended that students take the undergraduate chemistry research courses as university-wide electives in this program. Because two-thirds of all chemists work with polymers during their professional lives, this program provides the background important for success in many industrial research areas. It also enables graduates to pursue further education in chemistry, polymer chemistry, or materials science and engineering.

Curriculum

Polymer chemistry, BS degree, typical course sequence (ACS certified)

COURSE		QTR. CR. HRS.
First Year		
1010-200	Chemical Safety	1
1010-230	Introduction to Cooperative Education and Chemical Careers	1
1010-251, 252	General Chemistry I, II	7
1010-255	General Chemistry I Lab	1
1008-261, 262	Quantitative Analysis I, II	7
1008-265, 266	Quantitative Analysis Lab I, II	3
1016-281, 282, 283	Calculus I, II, III	12
	Liberal Arts*	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
1010-499	Cooperative Education (optional, summer)	Co-op
Second Year		
1008-311	Instrumental Analysis	3
1008-318	Instrumental Analysis Lab	1
1008-312	Separations Techniques	3
1008-319	Separations Techniques Lab	1
1016-305	Multivariable Calculus	4
1013-431, 432, 433	Organic Chemistry I, II, III	9
1013-435, 436	Preparative Organic Chemistry Lab I, II	2

COURSE		QTR. CR. HRS.
1013-437	Systematic Identification of Organic Compounds III Lab	2
	Liberal Arts*	8
1010-499	Cooperative Education (optional)	Co-op
Third Year		
1029-301	Introduction to Polymer Technology	2
1016-306	Differential Equations	4
1017-311, 312, 313	University Physics I, II, III	12
1014-441	Chemical Thermodynamics	4
1010-401	Chemical Literature	2
1014-445	Chemical Thermodynamics Lab	1
	Liberal Arts*‡	4
1010-499	Cooperative Education (optional)	Co-op
Fourth Year		
1014-442	Quantum Chemistry	4
1014-446	Quantum Chemistry Lab	1
1014-443	Chemical Kinetics	4
1014-447	Chemical Kinetics Lab	1
1029-501	Organic Chemistry of Polymers	4
1029-505	Synthesis of High Polymers Lab	2
1012-562	Inorganic Chemistry I	4
1029-502	Polymer Chemistry: Chains and Solutions	4
	Liberal Arts*	8
1010-499	Cooperative Education (optional)§	Co-op
Fifth Year		
1009-502	Biochemistry**	3
1029-503	Polymer Chemistry: Properties of Bulk Materials	4
1029-504	Polymer Characterization Lab	2
1012-765	Preparative Inorganic Chemistry Lab**	3
	Chemistry Electives**	4
	University-wide Electives††	
1010-499	Cooperative Education (optional)§	Co-op
Total Quarter Credit Hours		**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ ACS highly recommends a foreign language (preferably German).
§ Students must take A-block co-op.
** Required only for ACS certification
†† Chemistry Research (1010-541, 542, 543) may be used as a university-wide elective and is highly recommended. Electives are necessary to bring the total quarter credit hours to 180 for graduation. Twelve credits are necessary for full-time status.

Accelerated dual degree option

ADMISSION TO THIS PROGRAM HAS BEEN SUSPENDED FOR THE 2011-2012 ACADEMIC YEAR.

The polymer chemistry program may be combined with the MS chemistry program, allowing undergraduate majors to acquire both degrees in a total of five years. Undergraduate students with both an overall and professional field-of-study GPA of 3.0 or above may apply to the chemistry graduate committee for entry as early as the third year. Students in a combined BS/MS program will be advised to complete only three quarters of cooperative education and to take graduate-level chemistry elective courses and thesis guidance (1010-879) during the fourth and fifth years. Students will complete the undergraduate degree requirements and 45 quarter credit hours toward the MS chemistry degree.

Polymer chemistry, combined BS/MS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1010-200	Chemical Safety	1
1010-230	Introduction to Cooperative Education and Chemical Careers	1
1010-251, 252	General Chemistry I, II	7
1010-255	General Chemistry I Lab	1
1008-261, 262	Quantitative Analysis I, II	7
1008-265, 266	Quantitative Analysis Lab I, II	3
1016-281, 282, 283	Calculus I, II, III	12
	Liberal Arts*	20
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
1010-499	Cooperative Education (optional, summer)	Co-op
Second Year		
1008-311	Instrumental Analysis	3
1008-318	Instrumental Analysis Lab	1
1008-312	Separations Techniques	3
1008-319	Separations Techniques Lab	1
1016-305	Multivariable Calculus	4
1016-306	Differential Equations	4
1013-431, 432, 433	Organic Chemistry I, II, III	9
1013-435, 436	Preparative Organic Chemistry Lab I, II	2
1013-437	Systematic Identification of Organic Compounds III Lab	2
	Liberal Arts*	12
1010-499	Cooperative Education (optional, summer)	Co-op
Third Year		
1029-301	Introduction to Polymer Technology	1
1010-401	Chemical Literature	2
1017-311, 312, 313	University Physics I, II, III	12
1014-441	Chemical Thermodynamics	4
1014-445	Chemical Thermodynamics Lab	1
	Liberal Arts*‡	4
	Chemistry Electives§	
1010-499	Cooperative Education (optional, summer)	Co-op
Fourth Year		
1014-442	Quantum Chemistry	4
1014-446	Quantum Chemistry Lab	1
1029-701	Organic Chemistry of Polymers	4
1029-702	Polymer Chemistry: Chains and Solutions	4
1029-704	Polymer Characterization Lab	2
1029-705	Preparative Polymer Chemistry	4
1014-443	Chemical Kinetics	4
1014-447	Chemical Kinetics Lab	1
1008-711	Advanced Instrumental Analysis**	3
1008-621	Advanced Instrumental Analysis Lab**	2
1012-562	Inorganic Chemistry I	4
1012-765	Preparative Inorganic Chemistry Lab**	3
	Chemistry Electives§	
1010-879	Research and Thesis Guidance**	3
Fifth Year§		
1009-702	Biochemistry**	3
1029-703	Polymer Chemistry: Properties of Bulk Materials	4
1010-870	Chemistry Seminar	2
1010-879	Research and Thesis Guidance††	6–13
Total Quarter Credit Hours		**225**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.

§ Course work in the fifth year will be determined by the graduate committee and will need to fulfill the requirement of 225 total credit hours. A minimum of 36 hours of 700-level or higher chemistry courses is required to graduate with both a BS and MS degree in chemistry.
** Required only for ACS certification.
†† A student will normally have 9 to 16 credit hours of Research and Thesis Guidance (1010-879).

Department of Physics

Michael Kotlarchyk, Head

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Physics, BS

http://www.rit.edu/cos/physics/

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Program overview

The department of physics offers a BS degree in physics, which can be completed in either four or five years, depending on the number of cooperative education experiences a student chooses to complete. Graduates find employment opportunities with industrial, academic, and governmental agencies or continue their education in master's 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.

Curriculum

Requirements for the BS degree

The student must meet the minimum requirements of the university as described in this bulletin. In addition, he or she must complete the requirements contained in the program shown here or its equivalent, as determined and approved by the department of physics. In conjunction with a faculty adviser, individual student programs may be established to meet particular needs, interests, and goals. A planned elective concentration in another field such as biology, chemistry, mathematics, computer science, business, or imaging science is possible.

For additional information on BS degree requirements or requirements for the minors in physics or astronomy, contact the head of the department of physics.

Physics, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
1017-200	Introduction to Special Relativity	2
1017-311, 312	University Physics I, II	10
1016-281, 282, 283	Project-Based Calculus I, II, III	12
Choose one of the following course sequences:		9 or 8
1011-205, 206	General and Analytical Chemistry I, II 1011-215, 216 and Lab I, II	
1001-251, 252	Introduction to Biology I, II	
1017-317	Introduction to Computational Physics and Programming	4
	Liberal Arts*	16
1105-051, 052	First-Year Enrichment	2
	Wellness Education†	0
Second Year		
1017-313	University Physics III	4

COURSE		QTR. CR. HRS.
1017-314, 315	Modern Physics I, II	8
1017-431	Electronic Measurements	4
1017-374	Experiments in Modern Physics I	2
1017-318	Vibrations and Waves	4
1017-350	Sophomore Physics Seminar	1
1016-305	Multivariable Calculus	4
1016-306	Differential Equations I	4
	University-wide Elective	4
	Liberal Arts*	12
Third Year		
1017-401, 402	Intermediate Mechanics I, II	8
1017-411, 412	Electricity and Magnetism I, II	8
1017-415	Thermal Physics	4
1017-321	Introduction to Laboratory Techniques	4
1017-480	Mathematical Methods in Physics I	4
1017-378	Experiments in Modern Physics II	2
1017-400	Capstone Preparation	1
	Liberal Arts*	8
	University-wide Elective	4
	General Education Elective‡	4
Fourth Year		
1017-455	Physical Optics I	4
1017-502, 503	Capstone Project I, II	7
1017-522, 523	Quantum Mechanics I, II	8
	Physics Electives	8
	University-wide Elective	4
	General Education Electives‡	10
Total Quarter Credit Hours		**189-190**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ General education elective is generally defined as any course from the College of Science (excluding physics) and the College of Liberal Arts; certain courses to be defined later. There are exceptions. Check with your academic adviser for approval.

Chester F. Carlson Center for Imaging Science

Stefi A. Baum, Director

www.cis.rit.edu

The Carlson Center for Imaging Science offers a BS degree in imaging science as well as MS and Ph.D. degrees in imaging science and in color science. The science of imaging encompasses a wide range of subject areas, from the physics of light sources to the psychophysics of high-level visual perception. From how light is generated to how the world is perceived, imaging science addresses questions about every aspect of systems and techniques that are used to create, perceive, analyze, and optimize images. Application areas of imaging are equally diverse. Thus, imaging science is interdisciplinary in its content and multi-disciplinary in its applications. The center conducts research and prepares students for challenging and rewarding careers in a range of imaging application areas.

Imaging Science, BS

http://www.cis.rit.edu/

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Program overview

Imaging science is a multidisciplinary field based on physics, mathematics, computer science, systems engineering, and chemis-

try. Students in imaging science study the theory behind the technologies used to create images, the integration of those technologies into imaging systems, and the application of those systems to solve scientific problems. The imaging science curriculum 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, and astronomical observatories;
- how the captured observables are processed using computers and specialized software;
- how processed signals are converted into images displayed on paper or electronic devices and perceived by humans; and
- how image quality is assessed and scientific information is extracted.

Concepts presented in the classroom are reinforced through laboratory experiments and a capstone research experience, which can examine a problem in any of several imaging applications such as remote sensing, astronomy, medical imaging, document restoration, image microstructure, optics, color science, image quality, or visual perception. Students may choose to pursue a minor to supplement their major field of study. Both theoretical studies and practical application of technologies are integral parts of the program.

Career opportunities are many and varied. Graduates are in demand by both industry and governmental agencies to work on the design, development, testing, or production of specialized imaging systems or technologies, or to use imaging systems to perform scientific research. The imaging science faculty members are deeply committed professionals who divide their time between teaching and the pursuit of scientific advances.

Faculty, staff, and students conduct research sponsored by both industry and the government. The research support ensures that students are exposed to the latest developments in a rapidly expanding field.

Graduate programs are offered in both imaging science and color science leading to MS and doctoral degrees. Students also may choose to minor in imaging science.

Curriculum

Students must meet the minimum requirements of the university as described in this bulletin. In addition, they must complete the requirements contained in the program shown here or its equivalent, as determined and approved by the imaging science faculty. Cooperative education experience is not required but is recommended for the summers following the second and third years of the program. In consultation with a faculty adviser, a two-quarter co-op block is possible. Opportunities also exist to participate in research work with faculty during academic and summer quarters.

Imaging science, BS degree, typical course sequence

COURSE		QTR. CR. HRS.
First Year		
	Freshman Imaging Project (sequence)	6
	Science Electives‡	8
1016-281, 282, 283	Project-Based Calculus I, II, III	12
1017-311, 312	University Physics I, II	10
	General Education Elective	4
	Liberal Arts*	8
	First-Year Enrichment	1
Second Year		
1051-211	Programming for Imaging Science	4
1051-300	Introduction to Imaging Systems	4
1051-303	Geometrical Optics	4
1051-320	Linear Mathematics for Imaging	4
1051-553	Mathematical Methods for Imaging	4
1051-350	Vision and Psychophysics	4
1051-361	Digital Image Processing	4
1051-370	Radiometry	4
1016-305	Multivariable Calculus	4
1017-313	University Physics III	4
1017-314	Modern Physics I	4
	Liberal Arts*	4
	Wellness Education†	0
Third Year		
	Imaging Science Laboratory (sequence)	3
1051-452	Modulation Transfer Function	3
1051-453	Noise and Random Processes	3
1051-402	Color Science	4
1051-462	Digital Image Processing II	4
1051-553	Probability and Statistics for Imaging	4
1051-313	Interactions Between Light and Matter	4
1051-455	Physical Optics	4
1051-465	Detectors	4
	Statistical Tools and Research Practices	3
	Liberal Arts*	12
Fourth Year		
1051-502	Senior Project	4
1051-503	Senior Project	4
	University-wide Electives	12
	Professional Electives	8
	Liberal Arts*	12
Total Quarter Credit Hours		**185**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Consult with adviser for suggested science electives.

College of Science

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George M. Thurston, AB, Oberlin College; Ph.D., Massachusetts Institute of Technology—Professor

Greg Trayling, B.Sc., Simon Fraser University (Canada); M.Sc., University of Victoria (Canada); Ph.D., University of Windsor (Canada)—Lecturer

David J. Urminsky, B.Sc., McMaster University (Canada); M.Sc., University of British Columbia (Canada); Ph.D., University of Edinburgh (U.K.)—Lecturer

Jerome Wagner, BS, Case Institute of Technology; MS, Ph.D., University of Wisconsin—Professor

Eric J. West, BS, BA, University of Minnesota, Duluth; MS, Ph.D., Syracuse University—Visiting Assistant Professor

John J. Zielinski, BS, University of Notre Dame; MS, University of Illinois; Ph.D., University of Texas—Lecturer

Center for Materials Science and Engineering

K.S.V. Santhanam, B.Sc., MA, Ph.D., Sri Venketaswara University (India)—Director; Professor

John Andersen, BS, State University of New York at Buffalo; Ph.D., University of Rochester—Professor

Linda Barton, BS, Massachusetts Institute of Technology; MS, Ph.D., University of Illinois—Associate Professor

David A. Borkholder, BS, Rochester Institute of Technology; MS, Ph.D., Stanford University—Associate Professor

Robert J. Bowman, BS, Pennsylvania State University; MS, San Jose State University; Ph.D., University of Utah—Professor

Peter A. Cardegna, BS, Loyola College; Ph.D., Clemson University—Professor

Robert A. Clark, BS, Massachusetts Institute of Technology; Ph.D., University of Maryland—Professor Emeritus

Tracy Davis, BA, BS, Wofford College; Ph.D., Clemson University—Associate Professor

Alan B. Entenberg, AB, Washington University; Ph.D., University of Rochester—Professor

Surendra K. Gupta, B.Tech., Indian Institute of Technology; MS, University of Notre Dame; Ph.D., University of Rochester—Professor

Richard K. Hailstone, BS, Northern Illinois University; MS, Indiana University—Associate Professor

Joseph P. Hornak, BS, Utica College of Syracuse University; MS, Purdue University; Ph.D., University of Notre Dame—Professor

Seth M. Hubbard, BS, Drexel University; MS, Case Western Reserve University; Ph.D., University of Michigan—Assistant Professor

Marvin L. Illingsworth, BS, Lafayette College; Ph.D., University of Massachusetts—Professor

Michael Jackson, BS, MS, Ph.D., State University of New York at Buffalo—Associate Professor

Michael Kotlarchyk, BS, MS, Ph.D., Massachusetts Institute of Technology—Professor

Santosh Kurinec, BS, MS, Ph.D., University of Delhi (India)—Professor

Kathleen Lamkin-Kennard, BS, Worcester Polytechnic Institute; MS, Ph.D., Drexel University—Assistant Professor

Vern W. Lindberg, BS, University of Alberta (Canada); MS, Ph.D., Case Western Reserve University—Professor

Massoud Miri, BS, MS, Ph.D., University of Hamburg (Germany)—Associate Professor

Ali Ogut, B.Ch.E., Hacettepe University (Turkey); MS, Ph.D., University of Maryland—Associate Professor

Sannasi Ramanan, BS, Madras University (India); BE, Indian Institute of Science; M.Tech., Ph.D., Indian Institute of Technology—Associate Professor

Bruce Smith, BS, MS, Ph.D., Rochester Institute of Technology—Professor

Thomas W. Smith, BS, John Carroll University; Ph.D., University of Michigan—Professor

David A. Sumberg, BA, Utica College of Syracuse University; MS, Ph.D., Michigan State University—Associate Professor

Gerald A. Takacs, BS, University of Alberta (Canada); Ph.D., University of Wisconsin—Professor

Jerome Wagner, BS, Case Institute of Technology; MS, Ph.D., University of Wisconsin—Professor

Chester F. Carlson Center for Imaging Science

Stefi A. Baum, BA, Harvard University; Ph.D., University of Maryland—Director; Professor

Roy S. Berns, BS, MS, University of California; Ph.D., Rensselaer Polytechnic Institute—Director, Munsell Color Science Laboratory; Richard S. Hunter Professor

Roger Dube, BS, Cornell University; Ph.D., Princeton University—Research Professor

Roger L. Easton Jr., BS, Haverford College; MS, University of Maryland; Ph.D., University of Arizona—Professor

Mark D. Fairchild, BS, MS, Rochester Institute of Technology; Ph.D., University of Rochester—Professor

James A. Ferwerda, BA, MS, Ph.D., Cornell University—Associate Professor

Donald F. Figer, BA, Northwestern University; MS, University of Chicago; Ph.D., University of California at Los Angeles—Professor

Jinwei Gu, BS, MS, Tsinghua University (China); Ph.D., Columbia University—Assistant Professor

Richard Hailstone, BS, Northern Illinois University; MS, Indiana University—Associate Professor

Maria Helguera, BS, National Autonomous University of Mexico; MS, University of Rochester; Ph.D., Rochester Institute of Technology—Assistant 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 Research Professor

Joel Kastner, BS, University of Maryland; MS, Ph.D., University of California—Professor

John P. Kerekes, BS, MS, Ph.D., Purdue University—Associate Professor

Robert L. Kremens, BS, The Cooper Union; MS, University of Rochester; MS, Ph.D., New York University—Associate Research Professor

David W. Messinger, BS, Clarkson University; Ph.D., Rensselaer Polytechnic Institute—Associate Research Professor

Zoran Ninkov, BS, University of Western Australia; M.Sc., Monash University (Australia); Ph.D., University of British Columbia (Canada)—Professor

Jake Noel-Storr, M.Sc., University of Birmingham (U.K.); MA, M.Phil., Ph.D., Columbia University—Assistant Research Professor

Jeff Pelz, BFA, MS, Rochester Institute of Technology; Ph.D., University of Rochester—Professor

Joe Pow, BS, MS, University of Rochester; MS, Air Force Institute of Technology—Associate Director

Navalgund Rao, BS, MS, Banaras Hindu University (India); Ph.D., University of Minnesota—Professor

Harvey Rhody, BS, University of Wisconsin; MSEE, University of Cincinnati; Ph.D., Syracuse University—Professor

Carl Salvaggio, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York College of Environmental Science and Forestry—Professor

John Schott, BS, Canisius College; MS, Ph.D., Syracuse University— Frederick and Anna B. Weidman Professor

Grover Swartzlander, BS, Drexel University; MS, Purdue University; Ph.D., Johns Hopkins University— Associate Professor

Jan van Aardt, B.Sc., University of Stellenbosch (South Africa); MS, Ph.D., Virginia Polytechnic Institute—Associate Professor

Anthony Vodacek, BS, University of Wisconsin; MS, Ph.D., Cornell University—Associate 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: Roy S. Berns

Frederick and Anna B. Wiedman Professorship
Established: 1985
Donor: Frederick Wiedman Jr.
Purpose: To establish a permanent memorial to Frederick and Anna B. Wiedman, lifelong residents of Rochester and longtime friends of RIT.
Held by: John R. Schott

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: James A. Ferwerda

Liberal Arts Concentrations

www.rit.edu/cla/concentrations.php

Students may complete their upper-level liberal arts requirement by completing a minor (refer to the Minors section of this bulletin) or a liberal arts concentration. The core liberal arts requirements remain the same regardless of whether a student elects to complete a minor or concentration.

A liberal arts concentration is a cohesive set of **three** upper-level courses (12 quarter credit hours) approved by the faculty for use in meeting the university's liberal arts general education requirements. Concentrations may be disciplinary or interdisciplinary, and some may require prerequisite course work. A complete list of concentrations, including course requirements, follows.

African Studies

Conerly Casey, Concentration Adviser
(585) 475-7467, cccgss@rit.edu

The African studies concentration provides students with a broad understanding of the African people and their histories, societies, and cultures from pre-colonial times to the post-colonial period and the contemporary neo-liberal era. The concentration allows students to critically analyze the social worlds of Africa and reverberations for the African Diaspora by examining cultures, societies, and histories from multiple perspectives and by analyzing changing and competing interpretations of issues, events, and political issues in African societies.

Electives—Choose three of the following:

0510-486	Globalizing Africa
0510-487	African Popular Cultures
0510-460	Genocide and Post-Conflict Justice
0515-482	African American Culture
0524-420	Introduction to African Studies
0524-421	African Slave Trade

American Artistic Experience

Tina Lent, Concentration Adviser
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This concentration provides students with the opportunity to study the American artistic experience in a variety of arts, including painting, architecture, film, photography, music, theater, and mass media. Each course will present American art within the context of the broader current of American life, including its history, philosophy, social, and cultural traditions.

Electives—Choose three of the following:

0505-442	Music in the United States
0505-443	Images of American Life
0505-444	American Painting
0505-445	Issues in American Art
0505-446	American Film of the Studio Era
0505-447	American Musical
0505-448	20th Century American Music
0505-452	Special Topics in American Art*
0505-453	Theater in the United States
0505-454	Orchestra Repertoire and History
0505-455	Survey of Jazz
0505-457	Contemporary Drama, Theater, and Media
0505-463	Survey of African-American Music
0505-464	Blues as Personal and Social Commentary
0505-467	American Film Since the 1960s
0505-470	American Popular Song 1830-1950
0505-471	American Popular and Rock Music
0505-488	Special Topics in American Theater*
0505-491	Traumatic Images
0505-500	African-American Art
0505-504	Memory, Memorials, and Monuments
0505-505	Art in the Age of the New Deal
0505-506	Museums of Art and Design
0505-507	Landscapes Transformed
0505-516	Queer Looks

* Topics will vary.

American Politics

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Sean Sutton, Concentration Adviser
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The value in studying the American political system can scarcely be overemphasized. As Thomas Jefferson maintained, only an educated and enlightened democracy can endure. A democratic society remains valid only to the extent that its citizens are educated and well-informed about their government and issues of public policy. The purpose of this concentration is to give students a sound understanding of the U.S. political system. Courses detail various aspects of the American political system, giving students the tools to participate effectively in the political process.

Electives—Choose three of the following:

0508-484	Environmental Policy
0513-425	Politics and the Life Sciences
0513-426	Cyberpolitics
0513-427	Evolutionary International Relations
0513-428	Evolution and the Law
0513-429	Primate Politics
0513-449	Special Topics in Political Science
0513-450	State and Local Politics
0513-451	The Congress
0513-452	The American Presidency
0513-453	American Foreign Policy
0513-454	Political Parties and Voting
0513-455	Politics and Public Policy
0513-456	The Judicial Process
0513-457	Constitutional Law
0513-458	American Political Thought
0513-460	Constitutional Rights and Liberties
0513-462	Abraham Lincoln and American Democracy
0513-463	First Amendment, Liberty, and Deliberative Democracy
0513-465	Modern Constitutionalism, Liberty, and Equality
0513-466	Political Leadership
0513-481	Women in Politics
0513-485	Politics through Fiction
0513-514	Political Theory

Archaeology

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Archaeology is the study of the human past by means of the physical residues of past human behavior: for example, poetry, stone and metal tools, and the remains of ancient dwelling sites. The 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.

Electives—Choose three of the following:

0510-455	Special Topics
0510-485	Exploring Ancient Technology
0510-502	Archaeology and the Human Past
0510-506	Great Discoveries in Archaeology
0510-507	Archaeological Science
0510-508	Archaeology of Cities
0510-509	Survey of Metallurgy
0510-511	Field Methods in Archaeology
0510-512	Garbage Archaeology

Art History

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The art history concentration is the study of art history across a broad period of historical time and geographical space. The variety of specialized courses allows students to gain insight into the artistic contributions of Europe, Asia, and the developing world.

The concentration includes several liberal arts courses and some upper-division specialty art history courses. This concentration is offered as an alternative to the American artistic experience concentration, specifically designed for those students who wish to acquire a broader understanding of art and culture outside of the United States.

Electives—Choose three of the following:

0505-421	Introduction to Museums and Collecting
0505-422	Art Materials: Panel Printing
0505-423	Art Materials: Photography
0505-424	Legal and Ethical Issues for Collecting Institutions
0505-425	Display and Exhibition Design
0505-436	Women's Stories and Films
0505-437	The Forensic Investigation of Art
0505-438	Conservation of Cultural Material
0505-443	Images of American Life
0505-444	American Painting
0505-445	Issues in American Art
0505-446	American Film of the Studio Era
0505-452	Special Topics*
0505-467	American Film Since the 1960s
0505-468	Art of India and Southeast Asia
0505-469	Art of China, Korea, and Japan
0505-480	Women and the Visual Arts
0505-487	Special Topics: Art of Islam†
0505-491	Traumatic Images
0505-500	African-American Art
0505-504	Memory, Memorials, and Monuments
0505-505	Art in the Age of the New Deal
0505-506	Museums of Art and Design
0505-507	Landscape Transformed
0505-516	Queer Looks

* Special Topics (0505-452) may include the following topics: American Architecture, Queer Looks I, Queer Looks II, Harlem Renaissance, Visual Culture, Reading Images, Traumatic Images, and Art of Dying.
† Special Topics: Art of Islam (0505-487) may include the following topics: Persian/Turkish/Mughal Traditions and Arabic Tradition.

Communication

Grant Cos, Concentration Adviser
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This concentration provides opportunities for the advanced study of selected areas of communication. Topics include 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. Students are encouraged to complete Human Communication (0535-480) before enrolling in other concentration courses. *This concentration is closed to students enrolled in the following degree programs: professional and technical communication, advertising and public relations, and journalism.*

Electives—Choose three of the following:

0535-414	Interpersonal Communication
0535-480	Human Communication
0535-481	Persuasion
0535-482	Mass Communications
0535-483	Small Group Communication
0535-501	Public Speaking
0535-520	Intercultural Communication

Criminal Justice

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A concentration in criminal justice 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; the broad understanding of the causes of crime; and the societal response to crime through the police, courts, and corrections. The concentration further introduces students to the body of theory and research necessary to examine the effects and effectiveness of the criminal justice process. *This concentration is closed to students enrolled in the criminal justice degree program.*

Required Course:

0501-400	Criminology

Electives—Choose two of the following:

0501-405	Major Issues in the Criminal Justice System
0501-406	Technology in Criminal Justice
0501-415	Domestic Violence
0501-440	Juvenile Justice
0501-441	Corrections
0501-443	Law Enforcement in Society
0501-444	Concepts in Criminal Law
0501-445	Minority Groups and the Criminal Justice System
0501-446	Women and Crime
0501-456	Courts
0501-507	Computer Crime
0501-511	Alternatives to Incarceration
0501-517	Comparative Criminal Justice Systems
0501-518	Crime and Justice in the Community
0501-522	Victimless Crime
0501-523	Crime and Violence

Deaf Studies

J. Matt Searls, Concentration Adviser
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This concentration provides students who are fluent in American Sign Language (ASL) with the opportunity to study deaf culture from various perspectives.

Prerequisite: Proficiency in ASL is required for American Sign Language Literature (0525-595, 0504/0525-400) and Structure of American Sign Language (0525-496). Therefore, only students with ASL proficiency (not beginning or intermediate level skills) will be able to declare this concentration. Evening students may not declare this concentration.

Electives—Choose three courses from the following groups:

Choose one of the following linguistics courses:	
0525-385	Linguistics of ASL
0525-386	American Sign Language Literature
0525-391	American Sign Language II
0525-596	Special Topics: DST
Choose two of the following culture courses:	
0504-545	Deaf American Literature
0507-463	American Deaf History
0507-473	European Deaf History
0507-476	Diversity in the Deaf Culture
0507-477	Oppression in Lives of Deaf People
0515-452	Special Topics: Diversity in the Deaf Community
0515-529	Deaf Culture in America

Economics

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Bharat Bhole, Concentration Adviser
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Economics is the study of human behavior in the allocation of scarce resources to production and the distribution of production among the members of society. The study of economics has taken on increasing importance as we realize that so many of the world's problems, including energy, overpopulation, and global pollution, have an economic basis. The purpose of the economics concentration is to apply tools of economic analysis to a variety of study areas. *Note: The economics concentration is closed to students enrolled in the economics degree program.*

Prerequisite:

0511-211	Principles of Microeconomics

Electives—Choose three of the following:

0511-402	Principles of Macroeconomics†
0511-440	Urban Economics
0511-441	Economics of Human Resources
0511-442	Contemporary International Economic Problems
0511-443	Current American Macroeconomics Problems
0511-444	Public Finance
0511-445	Survey of Economic Thought
0511-448	Economics of Less Developed Countries
0511-449	Comparative Economic Systems
0511-450	Benefit-Cost Analysis
0511-452	Monetary Analysis and Policy
0511-453	Intermediate Microeconomic Theory
0511-454	International Trade and Finance
0511-455	Intermediate Macroeconomic Theory
0511-456	Industrial Organization
0511-457	Applied Econometrics*
0511-458	Economic Forecasting*
0511-459	Managerial Economics
0511-460	Mathematical Methods: Economics*
0511-461	Seminar in Applied Economics
0511-464	Game Theory with Economic Applications
0511-466	Health Care Economics
0511-480	Economic Role of Women
0511-481	Environmental Economics
0511-484	Natural Resource Economics
0511-571	Honors Seminar in Economics

* Introductory calculus and statistics are additional prerequisites for these courses.
† It is recommended that students take Principles of Macroeconomics (0511-402) as their first course before beginning the concentration.

Environmental Studies

Richard Shearman, Concentration Adviser
(585) 475-6604, rlsfsh@rit.edu

The environmental studies concentration 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 concentration 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.

Electives—Choose three of the following:

0507-464	Environmental Disasters in American History
0508-443	Face of the Land
0508-460	Environment and Society
0508-463	Great Lakes I
0508-464	Great Lakes II‡‡
0508-482	Energy and the Environment
0508-483	Environmental Values
0508-484	Environmental Policy
0508-487	Special Topics: Environmental Studies†
0508-488	History of Ecology and Environmentalism
0508-489	History of the Environmental Sciences
0508-490	Biodiversity and Society
0508-491	Sustainable Communities
0508-500	Science, Technology, and Society Classics
0508-520	Historical Perspectives on Science and Technology Seminar*
0508-530	Seminar in Science, Technology, and the Environment††
0508-540	Science and Technology Policy Seminar‡
0508-570	Environmental Studies Seminar§
0509-453	Environmental Philosophy
0510-449	Sustainable Development
0511-481	Environmental Economics**
0511-484	Natural Resource Economics**
0515-449	Population and Society§§
0521-451	Energy Policy

* Prerequisite: any two of the history of science or technology courses approved by the department
† Topics will vary.
‡ Prerequisite courses: Science and Technology Policy (0508-441), Environmental Policy (0508-484), or Foundations of Public Policy (0521-400)
§ Prerequisite: Two environmental studies electives
** Prerequisite course: Principles of Microeconomics (0511-211)
†† Prerequisite: Any two science, technology, and society courses
‡‡ Prerequisite: Great Lakes I (0508-463)
§§ Prerequisite: Cultural Anthropology (0510-210), Foundations of Sociology (0515-210) or equivalent

Global Justice and Peace Studies

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The global justice and peace studies concentration examines attempts to effect lasting accord and social justice on the international scale. Courses in philosophy, social sciences, and literature help students to understand concepts of human rights, world poverty, and global solidarity. The goal of the concentration is to elucidate the link between concepts of peace and justice while assessing nonviolent means of conflict resolution. *Note: Evening students may not declare this concentration.*

Electives—Choose three of the following:*

0504-319	Arts of Expression: To Make Peace
0509-445	Social and Political Philosophy
0509-446	Philosophy of Law
0509-447	Contemporary Moral Problems
0509-448	The Philosophy of Peace
0509-476	Ethical Theory
0510-459	Cultural Images, War, and Terror

0513-453	American Foreign Policy
0513-488	War and the State
0513-491	Politics of the Middle East

* With approval from the global justice and peace studies adviser, certain Special Topics or Great Thinkers courses may also satisfy the requirements for this concentration.

Global Studies

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The global studies concentration offers courses in economics, history, and political science. While some courses focus on the comparative economic and political systems of the world, others emphasize the development of modern states through studying their social, intellectual, and institutional systems. Finally, other courses examine relations among the states of the world. The purpose of this concentration is to provide students with an opportunity to develop a global perspective to examine the economic, political, historical, and diplomatic aspects of the contemporary world. The concentration further introduces students to the tools to analyze the component parts of the global system, namely the individual countries of which it is comprised. *Note: Evening students may not declare this concentration.*

Electives—Choose three of the following:

0507-441	Modern U.S. Foreign Relations
0507-446	Europe since 1945 and the European Union
0507-496	African History
0511-448	Economics of Lesser-Developed Countries*
0513-453	American Foreign Policy†
0513-461	Comparative Politics

* Prerequisite: Principles of Microeconomics (0511-211)
† Prerequisite: American Politics (0513-211) or Introduction to International Relations (0513-214)

Globalization

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Networks, flows of people, capital, goods, institutions, ideas, and images all contribute to globalization. This concentration analyzes the formal and informal connections across and beyond conventional borders and among the world's nations. Courses examine how these global 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.

Prerequisite—Choose one of the following:

0515-210	Foundations of Sociology (or equivalent)
0510-210	Cultural Anthropology (or equivalent)
0524-210	Global Studies (or equivalent)

Electives—Choose three of the following:

0510-440	Cultures in Globalization
0510-443	Immigration to the U.S.
0510-444	Global Economy and the Grassroots
0510-445	Global Cities
0510-447	Anthropology of Mass Media
0510-449	Sustainable Development
0510-451	Global Sexualities
0510-459	Cultural Images of War and Terror

0515-453	Global Exiles of War and Terror
0524-422	Histories of Globalization

History

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This concentration offers courses in three major geographic areas: Europe, America, and the Third World. While some courses focus on the internal development of a people through studying their social, intellectual, and institutional growth, others examine international affairs as reflected in the diplomatic relations between countries. Depending on which three courses are selected, the student may aim to achieve a breadth of understanding of various geographic regions and historical approaches or to acquire depth in a more restricted field of study.

Electives—Choose three of the following:

0507-401	American Women: Colonies to 1848
0507-402	American Women: 1848 to NOW
0507-410	Terrorism, Intelligence, and War
0507-411	Origins of U.S. Foreign Relations
0507-412	Modern Japan in History, Fiction, and Film
0507-440	U.S. Social and Intellectual History
0507-441	Modern U.S. Foreign Relations
0507-442	Contemporary Middle East
0507-443	European Social and Intellectual History Since 1600
0507-444	Strategy and Diplomacy of Europe
0507-445	Modern Latin American History
0507-446	Europe Since 1945 and the European Union
0507-447	U.S. History Since 1945
0507-448	History of Russia to 1917
0507-449	History of Russia Since 1917
0507-450	Stalin, Mussolini, Hitler
0507-451	History of Rochester
0507-462	The Civil War and Reconstruction
0507-463	American Deaf History
0507-464	Environmental Disasters in American History
0507-465	Survey of African-American History
0507-466	American Slavery, American Freedom
0507-467	American Disability History
0507-468	The United States and Japan
0507-469	Special Topics: History
0507-473	European Deaf History
0507-474	America's National Parks
0507-475	Hands on History
0507-485	Foundations of Asian Civilizations
0507-486	20th Century China and Japan
0507-487	Communist China
0507-488	Modern Germany
0507-489	Japan in the Modern World
0507-490	History of Mexico
0507-496	African History
0507-497	Biography As History

International Relations

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The international relations concentration introduces students to the complexities and shifting trends of international affairs, with an opportunity to study the significance of at least one aspect of the international system. We live in an increasingly interdependent world. Many career tracks will carry graduates into the multicultural arena of international transactions, which know no borders. Many emerging problems require international approaches if they are to be managed in the future.

Electives—Choose three of the following:

0507-442	Contemporary Middle East
0507-444	Strategy and Diplomacy of Europe
0507-488	Modern Germany
0513-425	Politics and the Life Sciences
0513-426	Cyberpolitics
0513-427	Evolutionary International Relations
0513-428	Evolution and the Law
0513-429	Primate Politics
0513-441	Politics in China
0513-443	Politics of Russia
0513-446	Politics in Developing Countries
0513-447	Human Rights/Global Perspectives
0513-449	Special Topics in Political Science
0513-453	American Foreign Policy
0513-461	Comparative Politics
0513-467	Modern Korea
0513-484	Government and Politics of Africa
0513-486	Comparative Politics in Latin America
0513-487	International Law and Organization
0513-488	War and the State
0513-489	Terrorism and Political Violence
0513-490	International Political Economy
0513-491	Politics of the Middle East
0513-492	Religion and International Politics
0513-493	Global Politics and the Environment
0513-494	Comparative Public Policy
0513-496	Government and Politics in East Asia

Latino/Latina/Latin American Studies

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The Latino/Latina/Latin American studies concentration enables students to explore the rich social, historical, and cultural heritage in the western hemisphere that emanates from the Caribbean and Central and South America and manifests itself in the history, sociology, anthropology, politics, languages, and literatures of the Latin American countries and the Latino/Latina populations in the United States. While knowledge of Spanish will significantly deepen the student's cultural understanding, language courses are an option rather than a required component of the concentration. Students may opt to complete the concentration with two elective courses and one language course or three elective courses. *Note: Evening students may not declare this concentration.*

Electives—Choose up to three of the following:†

0504-435	Global Literature: Latin American Literature
0504-447	Special Topics: Magical Realism
0504-469	American Literature: Latino
0504-479	Latino Experience in Literature
0510-442	Cultures and Politics in Latin America
0510-444	Global Economy and the Grassroots

0525-573	Women in the Hispanic World: Politics of Identity Formation
0525-576	Trauma and Survival in the First-Person Narrative
0525-577	Screening the Hispanic Caribbean
0525-579	Special Topics*

* Special Topics (0525-579) may include the following: The Caribbean and Globalization and Cuban Film: Cultural and National Identity.
† With department approval: CIAS Art History: Latin American Art History I, II, plus one additional credit per course.

One of the following Spanish or Portuguese language courses may be used for this concentration. The student should consult with the concentration adviser for placement at the proper level.

0525-521	Beginning Portuguese II
0525-522	Beginning Portuguese III
0525-523	Intermediate Portuguese I
0525-524	Intermediate Portuguese II
0525-525	Intermediate Portuguese III
0525-526	Advanced Portuguese I
0525-527	Advanced Portuguese II
0525-528	Advanced Portuguese III
0525-561	Beginning Spanish II
0525-562	Beginning Spanish III
0525-563	Intermediate Spanish I
0525-564	Intermediate Spanish II
0525-565	Intermediate Spanish III
0525-566	Advanced Spanish I
0525-567	Advanced Spanish II
0525-568	Advanced Spanish III

Literary and Cultural Studies

Elena Sommers, Concentration Adviser
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A concentration in literary and cultural studies offers a variety of approaches to the study of literary and non-literary texts, including but not limited to imaginative fiction, non-fiction, poetry, visual culture, and new media. Those who choose this concentration will have the opportunity to engage such texts through both traditional and contemporary approaches. Students will develop their critical and analytical abilities as they become versed in the formal, con-textual, and historical aspects of specific texts. All of the courses offered by the department of English are writing intensive and offer opportunities for sustained writing and communication practice.

Prerequisite:

0502-227	Writing (or equivalent)

Electives—Choose three of the following:

0502-463	Language and Brain
0525-400, 0504	American Sign Language Literature
0504-425	Great Authors
0504-435	Global Literature
0504-436	The Graphic Novel
0504-440	Drama and Theater
0504-441	The Art of Poetry
0504-442	The Short Story
0504-443	The Novel
0504-444	Film as Literature
0504-447	Special Topics
0504-448	Biographical Literature
0504-454	Shakespeare: Tragedy and Romance
0504-455	Shakespeare: Comedies and Histories

0504-460	Modern Poetry
0504-462	Literature and Technology
0504-464	Mythology and Folklore
0504-465	Viking Myth and Saga
0504-467	African American Literature
0504-469	American Literature
0504-474	Studies in British Literature
0504-476	Immigrant Voices in American Literature
0504-479	Latino Experience in Literature
0504-480	Women's Studies in Language and Literature
0504-482	Science Fiction
0504-545	Deaf American Literature

Material Cultural Studies

William Middleton, Concentration Adviser
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A concentration in material cultural studies allows students to study the resources and technologies that convert natural and man-made materials into cultural objects. Archaeological and art conservation science integrate chemistry, engineering, art, and anthropology in order to investigate methods and materials from the past. This concentration includes courses from a broad range of topics with laboratory components such as archeological science, forensic investigation of art, ancient metallurgy, art conservation, and the technology of organic and inorganic materials.

Electives—Choose three of the following:

0533-437	The Forensic Investigation of Art
0533-438	Introduction to Art Conservation
0531-441	GIS Applications
0531-444	Survey of Metallurgy
0531-445	Field Methods in Archaeology
0531-446	Native North Americans
0531-507	Archaeological Science
0531-508	Archaeology of Cities

Minority Relations in the United States

Kijana Crawford, Concentration Adviser
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A concentration in minority relations in the United States offers students a variety of academic perspectives on how groups of people sharing similar characteristics (whether cultural, inherited, or learned) interact with groups sharing different characteristics. The focus of this concentration is on racial and ethnic minorities in the U.S. Courses examine the issues of differential power between groups and analyze the social structures that are used to maintain or alter these power differences. Courses also look at the inter-personal level of response of both majority and minority group members. Finally, the concentration investigates the experience of minority groups in the U.S. *Note: Evening students may not declare this concentration.*

Required Course:

0515-448	Minority Group Relations

Electives—Choose two of the following:

0504-447	Special Topics: Multicultural Literature
0507-496	African History
0515-482	African-American Culture

0515-483	Hispanic-American Culture
0535-484	Rhetoric of Race Relations

Modern Language and Culture

This concentration will introduce students to the language, customs, and cultural aspects (history, art, literature) of one particular country or area. Students will choose two consecutive language courses beyond the introductory prerequisite language course, as well as one related liberal arts culture course. The goal of this concentration is to raise students' awareness of the relationship between language and culture and the differences between their own language and culture and those of the country they choose to study.

It is important to note that two out of the three required courses must be taken at RIT. Only one course may be transferred in, if necessary.

Students may not skip or go back to the lower level in the language course sequence. Students with some proficiency in the intended concentration should contact the concentration adviser to take a placement test prior to registration for the first course of the sequence at RIT. These concentrations are closed to native speakers. Evening students may not declare these concentrations.

Arabic

Diane Forbes, Concentration Adviser
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Prerequisite:

0525-400	Beginning Arabic I or equivalent.

Required Courses—Choose two of the following:

0525-401	Beginning Arabic II
0525-402	Beginning Arabic III
0525-403	Intermediate Arabic I
0525-404	Intermediate Arabic II
0525-405	Intermediate Arabic III
0525-406	Advanced Arabic I
0525-407	Advanced Arabic II
0525-408	Advanced Arabic III

Electives—Choose one of the following:

0505-487	Special Topics: Art of Islam: Persian/Turkish/Mughal Traditions
0505-487	Special Topics: Art of Islam: Arabic Tradition
0510-484	Islamic Culture/Middle East

ASL

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Prerequisite:

0525-390	Beginning American Sign Language I

Required Courses:

0525-391	American Sign Language II
0525-392	American Sign Language III

Electives—Choose one of the following:

0504-545	Deaf American Literature

0507-463	American Deaf History
0507-473	European Deaf History
0507-476	Diversity in the Deaf Culture
0507-477	Oppression in Lives of Deaf People
0515-529	Deaf Culture in America
0525-385	Linguistics of ASL
0525-386	American Sign Language Literature

* ASL courses taken through NTID cannot be applied toward this concentration.

Chinese

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Prerequisite:

0525-420	Beginning Chinese I or equivalent

Required courses—Choose two of the following:

0525-421	Beginning Chinese II
0525-422	Beginning Chinese III
0525-423	Intermediate Chinese I
0525-424	Intermediate Chinese II
0525-425	Intermediate Chinese III
0525-426	Advanced Chinese I
0525-427	Advanced Chinese II
0525-428	Advanced Chinese III

Electives—Choose one of the following:

0504-447	Special Topics: Chinese
0505-469	Art of China, Korea, and Japan
0507-485	Foundations of Asian Civilizations
0507-486	20th Century China and Japan
0507-487	Communist China
0513-441	Politics in China
0513-496	Government and Politics in East Asia

French

Philippe Chavasse, Concentration Adviser
(585) 475-3156, pxcgsl@rit.edu

Prerequisite:

0525-440	Beginning French I or equivalent

Required Courses—Choose two of the following:

0525-441	Beginning French II
0525-442	Beginning French III
0525-443	Intermediate French I
0525-444	Intermediate French II
0525-445	Intermediate French III
0525-446	Advanced French I
0525-447	Advanced French II
0525-448	Advanced French III
0525-459	Special Topics: Modern French Society

Electives—Choose one from the following:

0525-458	French Films and Hollywood
0504-487	Literature of French Black Africa and the Caribbean
0504-499	The View from Paris
0510-457	Divided Europe
0535-520	Intercultural Communication

German

Wilma Wierenga, Concentration Adviser
(585) 475-6829, wvwgsl@rit.edu

Prerequisite:

0525-460	Beginning German I or equivalent

Required Courses—Choose two of the following:

0525-461	Beginning German II
0525-462	Beginning German III
0525-463	Intermediate German I
0525-464	Intermediate German II
0525-465	Intermediate German III
0525-466	Advanced German I
0525-467	Advanced German II
0525-468	Advanced German III

Electives—Choose one from the following:

0525-477	Contemporary German Culture*
0525-479	Special Topics: Modern German Culture Through Film
0505-459	Era of Haydn and Mozart
0505-465	Special Topics: Mozart's Operas
0505-482	Beethoven
0505-483	Bach and the Baroque
0505-484	Romanticism in Music
0505-486	German Theater and Drama
0507-488	Modern Germany

* Contemporary German Culture (0525-477) is offered alternating summers in Germany.

Italian

Elisabetta D'Amanda, Concentration Adviser
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Prerequisite:

0525-500	Beginning Italian I or equivalent

Required Courses—Choose two of the following:

0525-501	Beginning Italian II
0525-502	Beginning Italian III
0525-503	Intermediate Italian I
0525-504	Intermediate Italian II
0525-505	Intermediate Italian III
0525-506	Advanced Italian I
0525-507	Advanced Italian II
0525-508	Advanced Italian III

Electives—Choose one from the following:

0525-519	Contemporary Italian Culture*
0504-435	Special Topics: Italian Literature†
0504-435	Special Topics: Survey of Italian Literature†

* Contemporary Italian Culture (0525-519) is offered each summer in Italy
† Special Topics: Italian Literature (0504-435) and Special Topics: Survey of Italian Literature (0504-435) are offered every other year.

Japanese

Yukiko Maru Leary, Concentration Adviser
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Prerequisite:

0525-480	Beginning Japanese I or equivalent

Required Courses—Choose two of the following:

0525-481	Beginning Japanese II
0525-482	Beginning Japanese III
0525-483	Intermediate Japanese I
0525-484	Intermediate Japanese II
0525-485	Intermediate Japanese III
0525-486	Advanced Japanese I
0525-487	Advanced Japanese II
0525-488	Advanced Japanese III

Electives—Choose one of the following:

0525-495	Japanese Culture in Print
0525-496	Structure of Japanese Language
0525-497	Languages in Japanese Society
0505-469	Art of China, Korea, and Japan
0507-468	The U.S. and Japan
0507-485	Foundations of Asian Civilizations
0507-486	20th Century China and Japan
0507-489	Japan in the Modern World
0513-496	Government and Politics in East Asia

Russian

Diane Forbes, Concentration Adviser
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Prerequisite:

0525-540	Beginning Russian I or equivalent.

Required Courses—Choose two of the following:

0525-541	Beginning Russian II
0525-542	Beginning Russian III
0525-543	Intermediate Russian I
0525-544	Intermediate Russian II
0525-545	Intermediate Russian III
0525-546	Advanced Russian I
0525-547	Advanced Russian II
0525-548	Advanced Russian III

Electives—Choose one of the following:

0504-435	Great Authors: Tolstoy
0504-435	Great Authors: Dostoyevsky
0504-485	Global Literature: Russian Literature
0505-435	Russian Art, 10th through 20th Century
0505-452	Special Topics: Russian Art I
0505-452	Special Topics: Russian Art II
0507-448	History of Russia to 1917
0507-449	History of Russia Since 1917
0507-450	Stalin, Mussolini, and Hitler
0513-443	Politics of Russia
0513-444	The Cold War and Beyond

Spanish

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(585) 475-6765, djfgsl@rit.edu

Prerequisite:

0525-560	Beginning Spanish I or equivalent.

Required Courses—Choose two of the following:

0525-561	Beginning Spanish II
0525-562	Beginning Spanish III
0525-563	Intermediate Spanish I
0525-564	Intermediate Spanish II
0525-565	Intermediate Spanish III
0525-566	Advanced Spanish I
0525-567	Advanced Spanish II
0525-568	Advanced Spanish III

Electives—Choose one of the following:†

0525-576	Trauma and Survival in the First-Person Narrative
0525-577	Screening the Hispanic Caribbean
0525-578	Women in the Hispanic World: Politics of Identity Formation
0525-579	Special Topics*
0504-435	Global Literature: Latin American Literature
0504-447	Special Topics: Magical Realism
0504-479	The Latino Experience in Literature
0510-442	Cultures and Politics in Latin America
0510-444	Global Economy and the Grassroots

* Special Topics (0525-579) may include the following: The Caribbean and Globalization and Cuban Film: Cultural and National Identity.
† With department approval: CIAS Art History: Latin American Art History I & II plus one additional credit per course

Music

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A concentration 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. *Note: Evening students may not declare this concentration.*

Electives—Choose three of the following:

0505-401	RIT Singers*
0505-402	RIT Orchestra*
0505-403	RIT Concert Band*
0504-404	RIT World Music Ensemble*
0504-405	RIT Jazz Ensemble*
0505-420	Applied Music*
0505-442	Music in the United States
0505-447	The American Musical Theater
0505-448	20th Century American Music
0505-449	Music Theory I†
0505-450	Music and the Stage
0505-454	Orchestra Repertoire and History
0505-455	Survey of Jazz
0505-456	Topics in Music History
0505-459	Era of Haydn and Mozart
0505-461	World Music I
0505-462	World Music II
0505-463	Survey of African-American Music

0505-464	Blues as Personal and Social Commentary
0505-465	Special Topics in Music
0505-470	American Popular Song 1830-1950
0505-471	American Popular and Rock Music
0505-482	Beethoven
0505-483	Bach and the Baroque
0505-484	Romanticism in Music
0505-485	Music Theory II‡

* Each of these ensemble and applied music courses is one quarter credit hour. Four quarters of participation are required to complete one concentration course.
† Prerequisite: Elementary Music Skills
‡ Prerequisite: Music Theory I (0505-449).

Native American Science and Technology

William Middleton, Concentration Adviser
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The Native American science and technology concentration enhances students' understanding of the unique heritages of Native North Americans and their relationships with other peoples in the United States and Canada. Courses emphasize traditional ways of learning, modern and ancient technologies used by contemporary tribes, histories of relations, and Native American and First Nations science.

Electives—Choose three of the following:

0510-442	Cultures in Latin America
0510-462	Language and Revitalization
0531-441	GIS Applications
0531-442	Economy of Native America
0531-443	Native American Repatriation
0531-445	Field Methods in Archaeology
0531-446	Native North Americans
0531-448	Native Americans in Film
0531-449	Archaeological Science
0531-450	Cultural Resource Management and Historic Preservation
0531-502	Introduction to Archaeology
0531-599	Independent Study: Field Experience with a Native American Tribe

Philosophy

Jack Sanders, Concentration Adviser
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The philosophy concentration provides students with an opportunity to study the nature, methods, problems, and achievements of philosophical inquiry. The concentration 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 the individual and the social settings with which he or she interacts. *This concentration is closed to students enrolled in the philosophy degree program.*

Electives—Choose three of the following:

0509-440	Philosophy of Religion
0509-441	Logic
0509-442	Philosophy of Art/Aesthetics*
0509-443	Philosophy of Science‡
0509-444	The Great Thinkers**
0509-445	Social and Political Philosophy§
0509-446	Philosophy of Law

0509-447	Contemporary Moral Problems
0509-448	Philosophy of Peace
0509-449	Special Topics**
0509-450	Seminar in Philosophy†**
0509-451	Professional Ethics
0509-452	Philosophy of Technology
0509-453	Environmental Philosophy
0509-454	Feminist Theory*
0509-455	Theories of Knowledge
0509-456	Ancient Philosophy
0509-457	Modern Philosophy
0509-458	Philosophy of Mind
0509-459	Philosophy of the Social Sciences††
0509-460	East Asian Philosophy
0509-461	American Philosophy
0509-462	Contemporary Philosophy
0509-464	Philosophy of Action
0509-465	Critical Theory*
0509-466	Existentialism
0509-467	Medieval Philosophy
0509-468	Metaphysics*
0509-469	19th Century Philosophy*
0509-470	Philosophy and Literary Theory*
0509-471	Philosophy of Film*
0509-472	Minds and Machines
0509-473	Technology and Embodiment
0509-474	Philosophy of Language*
0509-475	Philosophy of Vision/Imaging*
0509-476	Ethical Theory
0509-571	Honors Philosophy

* Prerequisite: One previous philosophy course or permission of the instructor is strongly encouraged.
† Prerequisite: Two prior courses in philosophy or permission of the instructor.
‡ Prerequisite: At least one prior course in either philosophy or one of the natural sciences (physics, chemistry, or biology).
§ Prerequisite: At least one prior course in philosophy, political science, or sociology
** Topics may vary.
†† Prerequisite: At least one prior course in either philosophy or one of the social sciences (psychology, economics, political science, sociology, or anthropology)

Psychology

Andrew Herbert, Concentration Adviser
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Kirsten Condry, Concentration Adviser
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This concentration provides advanced study in various areas of psychology. Courses enable students to learn more about their own and others' functioning. Students will become well-informed consumers of psychological information and will also learn to apply psychological principles in their own lives. *Note: This concentration is closed to students enrolled in the psychology program.*

Prerequisite:

0514-210	Introduction to Psychology or equivalent

Electives—Choose three of the following:

0502-463	Language and Brain
0514-440	Childhood and Adolescence
0514-441	Humanistic Psychology
0514-442	Adulthood and Aging
0514-443	Cognitive Psychology
0514-444	Social Psychology
0514-445	Psychology of Perception
0514-446	Psychology of Personality

0514-447	Abnormal Psychology
0514-448	Industrial and Organizational Psychology
0514-449	Behavior Modification
0514-451	Psychology of Motivation
0514-453	Death and Dying
0514-483	Social Psychology of Religion
0514-544	History and Systems

Public Policy

Richard Shearman, Concentration Adviser
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This concentration 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. At the heart of the concentration is the Foundations of Public Policy (0521-400) course, where students are introduced to the concept of public policy and the policy making process. The roles of stakeholders and interest groups are discussed in the context of contemporary cases in various policy arenas. Students are also introduced to some of the methodologies associated with policy analysis. Additional courses are offered from the areas of sociology; political science; and science, technology, and society. Policy Analysis I and II (0521-402, 403) are offered especially for students who are considering the MS in public policy or who have an interest in analytical tools.

Required course:

0521-400	Foundations of Public Policy

Electives—Choose two of the following:

0508-441	Science and Technology Policy
0508-484	Environmental Policy
0508-530	Seminar in Science, Technology, and the Environment*
0508-540	Science and Technology Policy Seminar*
0513-455	Politics and Public Policy*
0515-413	Urban Planning and Policy
0515-451	Transfer Technology and Globalization*
0521-401	Values and Public Policy*
0521-402	Policy Analysis I*
0521-403	Policy Analysis II*
0521-404	Policy Analysis III*
0521-406	Introduction to Qualitative Analysis*
0521-408	Technological Innovation and Public Policy*
0521-410	Information and Communications Policy*
0521-449	Special Topics in Public Policy†
0521-451	Energy Policy

* These courses have prerequisites or co-requisites.
† Topics will vary.

Religious Studies

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Religion plays a major role in human affairs. To understand the nature of society and the individual, it is essential to have some understanding of religion. The religious studies concentration engages students in the study of religion from the perspective of major Western and non-Western traditions through courses in such disciplines as anthropology, history, literature, philosophy, political

science, the fine arts, and sociology. (With approval from the religious studies adviser, certain Special Topics or Great Thinkers courses may also satisfy the requirements for the concentration.)

Electives—Choose three of the following:

0504-464	Mythology and Folklore
0504-467	African-American Literature
0504-484	Literature and Religion*
0505-468	Art of India and Southeast Asia
0505-469	Art of China, Korea, and Japan
0505-487	Art of Islam
0507-483	History of Christianity
0509-440	Philosophy of Religion
0509-460	East Asian Philosophy
0509-466	Existentialism†
0509-467	Medieval Philosophy
0509-468	Metaphysics†
0509-469	19th Century Philosophy†
0510-446	Native North Americans
0510-483	Anthropology of Religion
0510-484	Islamic Culture and the Middle East
0513-492	Religion and International Politics
0514-483	Social Psychology of Religion

* Prerequisite: Writing (0502-227).
† Student must obtain the approval of the religious studies concentration adviser.

Science and Technology Studies

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The science and technology studies concentration examines some major impacts of science and technology in the contemporary world. Special reference will be 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.

Electives—Choose three of the following:

0504-462	Literature and Technology*
0508-440	History of Science
0508-441	Science and Technology Policy
0508-442	History of American Technology
0508-443	Face of the Land
0508-444	Social Consequences of Technology
0508-445	Biomedical Issues: Science and Technology Studies
0508-446	Makers of Modern Science
0508-447	Special Topics: Science and Technology‡
0508-449	History of Women in Science and Engineering
0508-450	History of Chemistry
0508-451	Cyborg Theory: (Re)Thinking the Human Experience in the 21st Century
0508-452	Gender, Science, and Technology
0508-500	Science, Technology, and Society Classics
0508-520	Historical Perspectives on Science and Technology Seminar**
0508-530	Seminar in Science, Technology, and the Environment**

0508-540	Science and Technology Policy Seminar
0509-443	Philosophy of Science†
0515-451	Transfer Technology and Globalization§
0521-451	Energy Policy

* Prerequisite: Writing (0502-227) or an equivalent course.
† Prerequisite: At least one prior course in either philosophy or one of the natural sciences.
‡ Topics may vary.
§ Prerequisite: Foundations of Sociology (0515-210) or equivalent.
** Prerequisites: Any two of the history of science or technology courses approved by the department.

Sociology and Anthropology

Christine Kray, Concentration Adviser
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This concentration examines the dynamism and creative contestation of culture and social norms across the globe, as well as the constraints within which people negotiate meaningful lives. By selecting from courses on a wide range of topics—including gender and sexuality, families and marriage, ethnicity and racism, class and inequality, immigration, health and cultural conceptions of the body, urban life, war and violence, cultural images and mass media, technology and work, social movements, and globalization—students explore how people create and experience their social worlds.

Prerequisite–Choose one of the following:

0515-210	Foundations of Sociology (or equivalent)
0510-210	Cultural Anthropology (or equivalent)

Electives—Choose three of the following:

0510-440	Cultures in Globalization
0510-442	Cultures and Politics in Latin America
0510-443	Immigration to the U.S.
0510-444	Global Economy and the Grassroots
0510-445	Global Cities
0510-446	Native North Americans
0510-447	Anthropology of Mass Media
0510-448	Native Americans in Film
0510-449	Sustainable Development
0510-450	Cultural Resource Management and Historic Preservation
0510-451	Global Sexualities
0510-452	Bodies and Culture
0510-454	Visual Anthropology
0510-457	Divided Europe
0510-459	Cultural Images of War and Terror
0510-460	Genocide and Post-Conflict Justice
0510-461	Native American Repatriation
0510-483	Anthropology of Religion
0510-484	Islamic Culture and the Middle East
0510-486	Globalizing Africa
0510-487	African Popular Cultures
0510-488	Muslim Youth Cultures
0510-502	Archaeology and the Human Past
0510-506	Great Discoveries in Archaeology
0510-507	Archaeological Science
0510-508	The Archaeology of Cities
0510-509	Survey of Metallurgy
0510-511	Field Methods in Archaeology
0510-512	Garbage Archaeology
0515-406	Qualitative Methods
0515-413	Urban Planning and Policy
0515-441	The Changing Family
0515-442	Urban Experience

0515-443	Sociology of Work
0515-444	Social Change
0515-446	Sociology of Health
0515-447	Women, Work, and Culture
0515-448	Minority Group Relations
0515-449	Population and Society
0515-451	Transfer of Technology and Globalization
0515-453	Global Exiles of War and Terror
0515-482	African-American Culture
0515-483	Hispanic-American Culture
0515-485	Diversity in the City
0515-506	Social Inequality
0515-507	Complex Organizations
0515-509	Social Policy
0515-515	Social Policy and Aging
0515-524	Applied Sociology
0515-529	Deaf Culture in America
0515-569	Human Sexuality
0524-420	Introduction to African Studies
0524-421	African Slave Trade
0524-422	Histories of Globalization
0526-440	Quantitative Research
0526-441	GIS Applications in UCS

Theater Arts

Peter Ferran, Concentration Adviser
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This concentration offers students a focused study of the theatrical and dramatic arts, with courses in dramatic and theatrical literature, history, criticism, and theory. It also serves to offer students a more profound understanding of the theater arts and in a broader sense an introduction to cultural development and the communication of ideas.

Electives—Choose three of the following:

0505-450	Music and the Stage
0505-453	Theater in the United States
0505-457	Contemporary Drama, Theater, and Media
0505-458	Modern European Theater and Drama
0505-486	German Theater and Drama
0505-488	Special Topics: Theater Arts
0505-489	Theater Production Seminar and Workshop
0505-502	Shakespeare the Dramatist

Urban Studies

Jessica Pardee, Concentration Adviser
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Each metropolitan area must address such perennial issues as housing, transportation, education, crime, safety, recreation, and economic development. Each must do so with recognition of its place in the wider regional, national, and global contexts as well as with sensitivity to its own defining features. The concentration helps students identify and analyze such fundamental issues and allows them to explore and assess various ways policy-makers respond to those issues.

Prerequisite–Choose one of the following:

0515-210	Foundations of Sociology (or equivalent)
0510-210	Cultural Anthropology (or equivalent)

Electives–Choose three of the following:

0510-443	Immigration to the U.S.
0510-445	Global Cities
0510-508	Archaeology of Cities
0515-442	The Urban Experience
0515-413	Urban Planning and Policy
0515-485	Diversity in the City
0526-443	Community and Economic Development: Rochester

Women and Gender Studies

Tina Lent, Concentration Adviser
(585) 475-2460, tnlgsh@rit.edu

Women and gender studies offers students a variety of academic perspectives on the role of women in modern western civilization. The courses enable the student to examine the roles, values, and self-perceptions of women in a traditionally male-oriented society; develop a sophisticated, humanistic angle of vision from which to appreciate the many and varied accomplishments of women; and develop a mature sensitivity to the difficulties and frustrations encountered by women. Although the focus of the concentration is on the experiences of women, the concentration does not intend to be a study in separatism. Rather, it offers the possibility for integrating a new, academically disciplined appreciation of women's issues into the student's comprehension of wider problems and issues of humanity. All courses emphasize critical reading, thinking, and analysis. All require at least one substantial written assignment. Students are encouraged to relate the intellectual knowledge gained in each course to insights about their own experience and behavior.

Electives—Choose three of the following:

0505-480	Women and Visual Arts
0505-491	Traumatic Images
0505-516	Queer Looks
0510-451	Global Sexualities
0522-400	Foundations of Gender Studies*
0522-401	American Woman: Colonies to 1848*
0522-402	American Woman: 1848 to Now*
0522-405	Women and Science
0522-406	Feminist Theory*
0522-407	Seminar on Sexual Violence
0522-410	Introduction to Gay, Lesbian, Bisexual, and Transgender Studies
0522-415	Domestic Violence
0522-436	Women's Stories, Women's Films*
0522-439	Queer Looks I
0522-446	Women and Crime*
0522-447	Women, Work, and Culture*
0522-449	History of Women in Science and Engineering
0522-450	Gender, Science, and Technology*
0522-451	Global Sexualities
0522-452	Bodies and Culture
0522-453	Economic Role of Women
0522-454	Hispanic Women in the World
0522-459	Toni Morrison*
0522-460	Special Topics†

0522-480	Women and the Visual Arts*
0522-481	Women's Studies in Language and Literature*
0522-482	Women in Politics*
0522-483	Psychology of Women*
0522-484	Auto/Biography
0525-543	Women in the Hispanic World: Politics of Identity Formation

* These courses may require prerequisites.
† Special Topics (0522-460) may include the following: Traumatic Images, Queer Looks II, Art of Dying, Contemporary Women's History, Prostitution and Vice, and Queering Gender.

Writing Studies

Dianna Winslow, Concentration Adviser
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This concentration provides opportunities for advanced study in writing and linguistics. Courses provide opportunities for students to study language and develop strategies for effective writing across a variety of contexts. Writing processes and language awareness from academic to public forums receive close attention.

Prerequisite:

0502-227	Writing (or equivalent)

Electives—Choose three of the following:

0502-443	Written Argument
0502-444	Technical Writing
0502-445	The Evolving English Language
0502-449	Worlds of Writing
0502-455	Writing the Self and Others
0502-456	Rhetoric of Science
0502-457	Language, Variation, and Identity
0502-459	Creative Nonfiction
0502-460	Science Writing
0502-463	Language and Brain
0502-560	Special Topics in Writing

Minors

Students may complete their upper-level liberal arts requirement by completing a liberal arts minor of their choosing or by completing a liberal arts concentration (refer to the Liberal Arts Concentrations section of this bulletin). The core liberal arts requirements remain the same regardless of whether a student elects to complete a minor or a concentration.

Minors give students an opportunity to explore a secondary field of study. They can complement a student's major, allowing another area of professional expertise, or they can be used to enhance a personal interest. Minors require the completion of **five** upper-level courses (20 quarter credit hours).

Accounting

Jerry Curnutt, Minor Adviser
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Accounting is necessary in a wide variety of careers. Students completing an accounting minor will broaden their learning experiences and professional opportunities by having more depth in operational accounting topics.

Required Courses:	
0101-301	Financial Accounting
0101-302	Management Accounting
Electives—*Choose three of the following (at least two must be accounting electives):*	
0101-345	Accounting Information Systems
0101-408	Financial Reporting and Analysis I
0101-409	Financial Reporting and Analysis II
0101-522	Personal and Small Business Taxation
0101-523	Advanced Taxation
0101-554	Seminar in Accounting
0104-220	Personal Financial Management
0104-350	Corporate Finance
0110-319	Legal Environment of Business

Advertising and Public Relations

Grant Cos, Minor Adviser
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The advertising and public relations minor provides a solid background in understanding the creation of persuasive messages in a variety of media. This minor is closed to students enrolled in the following BS programs: professional and technical communication, advertising and public relations, and journalism.

Required Courses—*Choose two of the following:*	
0502-444	Technical Writing
0535-416	Newswriting
0535-446	Writing the Technical Manual
0535-480	Human Communication
0535-481	Persuasion
0535-482	Mass Communications
0535-483	Small Group Communication
0535-580	International Media
Electives—*Choose three of the following:*	
0535-421	Public Relations
0535-460	Copywriting and Visualization
0535-461	Principles of Advertising
0535-463	Campaign Management and Planning
0535-464	Public Relations Writing

American History

Rebecca Edwards, Minor Adviser
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The American history minor emphasizes the social, cultural, and political history of the United States.

Required Courses—*Choose five of the following:*	
0507-401	History of American Women: Colonies to 1848
0507-402	History of American Women: 1848 to Now
0507-410	Terrorism, Intelligence, and War
0507-411	Origins of U.S. Foreign Relations
0507-440	U.S. Social and Intellectual History
0507-441	Modern U.S. Foreign Relations
0507-447	U.S. Since 1945
0507-451	History of Rochester
0507-462	The Civil War and Reconstruction
0507-463	American Deaf History
0507-465	Survey of African-American History
0507-466	American Slavery, American Freedom
0507-467	American Disability History
0507-474	America's National Parks
0507-475	Hands-on History
0507-492	Selected Problems in Black History
0507-494	Immigration and Ethnicity
0507-495	The Civil Rights Movement in 20th Century U.S. History
0507-497	Biography in/as History

American Politics

Joseph Fornieri, Minor Adviser
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Sean Sutton, Minor Adviser
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A minor in American politics informs students about the structure and function of public institutions and prepares them for effective participation in the American political arena.

Electives—*Choose five of the following:*	
0508-484	Environmental Policy
0513-428	Evolution and the Law
0513-449	Special Topics in Political Science
0513-450	State and Local Politics
0513-451	The Congress
0513-452	The American Presidency
0513-453	American Foreign Policy
0513-454	Political Parties and Voting
0513-455	Politics and Public Policy
0513-456	Judicial Process
0513-457	Constitutional Law
0513-458	American Political Thought
0513-460	Constitutional Rights and Liberties
0513-461	Comparative Politics
0513-462	Abraham Lincoln and American Democracy
0513-463	First Amendment, Liberty, and Deliberative Democracy
0513-466	Political Leadership
0513-481	Women in Politics
0513-485	Politics Through Fiction
0513-514	Political Theory

Applied Communication

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The applied communication minor offers a foundation in the communication skills and theories associated with professional and organizational contexts. This minor is closed to students enrolled in the following BS programs: professional and technical communication, advertising and public relations, and journalism.

Required Courses—*Choose two of the following:*	
0502-444	Technical Writing
0535-416	Newswriting
0535-446	Writing the Technical Manual
0535-480	Human Communication
0535-481	Persuasion
0535-482	Mass Communications
0535-483	Small Group Communication
0535-580	International Media
Electives—*Choose three of the following:*	
0502-444	Technical Writing
0535-411	Health Communication
0535-415	Organizational Communication
0535-416	Newswriting
0535-421	Public Relations
0535-422	Ethics in Technical Communication
0535-426	Archival Research
0535-483	Small Group Communication
0535-501	Public Speaking
0535-502	Speech Writing
0535-532	Professional Writing

Applied Imaging Systems

Nitin Sampat, Minor Adviser
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The minor in applied imaging systems further develops experiences in the business and technology of photographic imaging, primarily as it relates to image output and lab operations. The courses in this minor include investigations of various components found in imaging, the technologies that are used and the practices found in imaging systems that range from the capture of images up through and not limited in output. The topics include but are not limited to digital capture systems and professional practices, output technologies, color management, and imaging workflows.

Required Courses:	
2076-411	Imaging Systems
2076-412	Color Management for Photographers
2076-413	Imaging Workflows
Electives—*Choose at least two of the following:*	
2061-361	Web Design Using Photography
2076-491	Digital Imaging Processing
2082-317	Website Design for Graphic Media
2082-337	Digital Asset Management
2082-401	Digital Print Processes
2083-368	Image Retouching and Restoration

* Equivalent courses may be substituted in lieu of these courses with the permission of the minor adviser.

Applied Informatics

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The minor in applied informatics provides students with the skills needed to extract data from its source; shape, transform, and analyze the data; and present the results in an effective way. Many professional fields are becoming information intensive. As a result, informatics skills are an essential tool. The minor provides basic skills in programming, data access and modeling, HCI, problem solving, and is open for noncomputing majors.

Prerequisites:	
None	
Required Courses:	
4002-250	Introduction to Informatics
4002-217	Programming for Information Technology I
4002-218	Programming for Information Technology II
4002-360	Introduction to Database and Data Modeling
Electives—*Choose one of the following:*	
4002-425	HCI 1: Human Factors
4002-455	Needs Assessment

Archaeological Science

William Middleton, Minor Adviser
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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.

Required Course:

0510-507	Archaeological Science

Electives—*Choose two courses from each of the following groups:*

Disciplinary

0510-502	Archaeology and the Human Past
0510-506	Great Discoveries in Archaeology
0510-508	Archaeology of Cities
0510-511	Field Methods in Archaeology

Applied/Laboratory

0505-422	Art Materials: Photography
0505-423	Art Materials: Panel Printing
0505-438	Conservation of Cultural Materials
0510-461	Native American Repatriation
0510-485	Exploring Ancient Technology
0510-509	Survey of Metallurgy
0510-512	Garbage Archaeology

Art History

Tina Lent, Minor Adviser
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The art history minor combines courses from the College of Liberal Arts and the College of Imaging Arts and Sciences. It provides studio art majors with the opportunity to enhance their knowledge of art history as they refine their own work and prepares them for possible careers in academia, galleries, and museums.

Requirements:

The art history minor is an option available only to students enrolled in BFA programs in the College of Imaging Arts and Sciences. Three courses from each college are required.

Prerequisites:

2039-225	Art and Civilization I
2039-226	Art and Civilization II
2039-227	Art and Civilization III

College of Liberal Arts

Electives—*Choose three of the following:*

0505-421	Introduction to Museums and Collecting
0505-422	Art Materials: Panel Printing
0505-423	Art Materials: Photography
0505-424	Legal and Ethical Issues for Collecting Institutions
0505-425	Display and Exhibit Design
0505-436	Women's Stories and Films
0505-437	Forensic Investigation of Art
0505-438	Conservation of Cultural Materials
0505-443	Images of American Life
0505-444	American Painting
0505-445	Issues in American Art
0505-446	American Film of the Studio Era
0505-452	Special Topics*
0505-467	American Film Since the 1960s
0505-468	Art of India and Southeast Asia
0505-469	Art of China, Korea, and Japan
0505-480	Women and the Visual Arts
0505-487	Special Topics: Art of Islam†
0505-491	Traumatic Images
0505-500	African-American Art
0505-504	Memory/Memorial/Monuments
0505-505	Art in the Age of the New Deal
0505-506	Museums of Art and Design
0505-507	Landscape Transformed
0505-516	Queer Looks

* Special Topics (0505-452) may include any of the following: American Architecture, Queer Looks I, Queer Looks II, Harlem Renaissance, Visual Culture, Reading Images, Traumatic Images, Art of Dying.
† Special Topics (0505-487) may include the following: Persian/Turkish/Mughal Traditions or Art of Islam: Arabic Tradition.

College of Imaging Arts and Science

Electives—*Choose three of the following:*

2039-300	History of Design
2039-306	Architecture, Interiors, and Furniture History I
2039-307	Architecture, Interiors, and Furniture History II
2039-308	Architecture, Interiors, and Furniture History III
2039-310	History of Crafts
2039-315	Pre-Columbian Art
2039-330	Philosophy of Art
2039-335	15th Century Art and Architecture in Florence and Rome
2039-340	Symbols and Symbol Making
2039-345	16th Century Art and Architecture in Florence and Rome
2039-355	Latin American Art
2039-360	18th and 19th Century Art
2039-365	20th Century Art (1900-1950)
2039-368	Scandinavian Modernism
2039-375	20th Century Art Since 1950
2039-376	Renaissance Painting/Flanders
2039-385	Installation Art
2039-390	Native American Art and Culture
2039-395	Theory and Criticism of 20th Century Art
2039-410	The Art of Art History
2039-415	Thinking About Making Art
2039-425	Public Art/Public Space
2039-430	Dada and Surrealism
2039-433	What Is Postmodernism?
2039-435	Art of the Last Decade
2039-438	Body in Art
2039-440	Conceptual Art
2039-450	Pop Art and Pop Culture
2039-452	Art and Activism
2039-459	Art of Central Italy 1250-1400
2039-469	Baroque Rome
2039-553	Special Topics*

* Special Topics (2039-553) may include any of the following: Gothic Art in Europe, Russian Art, Arts and Crafts Movement, Castles and Cathedrals, Global Visual Culture, Streamlining America, The Gothic Revival, Displaying Gender, The Russian Avant Garde 1850-1960, Passion for Porcelain.

Astronomy

Andrew Robinson, Minor Adviser
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Astronomy is an interdisciplinary minor offered jointly by the department of physics in the College of Science and the Chester F. Carlson Center for Imaging Science. Students will have the opportunity for additional study in astronomy in order to build a secondary area of expertise in support of their program or other areas of interest.

Prerequisites:

1017-311	University Physics I
1017-312	University Physics II
1017-313	University Physics III
1017-314	Modern Physics I

Required Course:

1017-301	University Astronomy*

Electives—*Choose four of the following courses (at least one must come from Group A and at least one from Group B)*

Group A	
1017-440	Stellar Astrophysics
1017-442	Galactic Astrophysics
1017-443	Extragalactic Astrophysics
Group B	
1017-445	Observational Astronomy
1051-446	Multi-wavelength Astronomical Imaging
1051-528	Design and Fabrication of an Experimental Solid State Camera
Remaining Electives:	
1017-539	Astrophysics Research†
	General Elective‡

* Only University Physics I (1017-311) is required as a prerequisite for this course.
† A maximum of 4 credits of Astrophysics Research (1017-539) will count toward the minor.
‡ Courses offered that currently qualify as a general elective include Digital Image Processing I (1051-361), Digital Image Processing II (1051-462), and Detectors (1051-465). Other courses may be offered from time to time that qualify as electives for the astronomy minor. Please contact the minor adviser for further information.

Business Administration

Jerry Curnutt, Minor Adviser
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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 waive certain MBA foundation courses.

Required Courses—*Choose three of the following:*	
0101-301	Financial Accounting
0102-320	Organizational Behavior
0104-220	Personal Financial Management
or	
0104-350	Corporate Finance
0105-363	Principles of Marketing
0106-401	Operations and Supply Chain Management
0110-319	Legal Environment of Business
0113-310	Global Business: An Introduction

Electives—Choose two electives from different Saunders College of Business discipline areas. The additional courses may come from the above list of required courses.

Chemical Engineering Systems Analysis

Steven Weinstein, Minor Adviser
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A 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 methodology that chemical engineers employ to analyze and solve real world problems involving distinct chemical components, chemical reaction, multiple phases, and mass transfer.

Prerequisites: There are chemistry and mathematics prerequisites for the minor.

Chemistry—*Choose one of the following*:*	
1011-216/206	General and Analytical Chemistry II with Lab
1011-273/277	Introduction to Chemical Materials with Lab
1011-212/206	Chemistry Principles II with Lab
1011-272/276	Chemistry of Water and Wastewater with Lab

Mathematics—Choose one of the following course sequences:

Sequence 1:	
1016-283	Project-Based Calculus III or equivalent
1016-306	Differential Equations
Sequence 2:	
1016-232	Calculus for Engineering Technology II
1016-304	Differential Equations for Technology
Required Courses:	
0309-230	Chemical Process Analysis‡
0309-340	Reaction Engineering I
0309-330	Mass Transfer Operations
0309-381	Chemical Engineering Systems Analysis Paper
Elective Courses†: *Choose at least two of the following courses:*	
0304-460	Contemporary Issues in Energy and the Environment
0304-461	Contemporary Issues in Bioengineering
0304-645	Introduction to Biomaterials
0304-710	Fuel Cell Technology
0304-756	Aerosols in the Respiratory Tract
0305-350	IC Technology
0305-643	Thin Film Processes
0305-666	Microlithography Materials and Processes
0303-520	Engineering Economy
0303-792	Design for the Environment
0301-370	Nano-science Engineering and Technology
0608-438	Principles of Treatment and Wastewater
0630-350	Solid and Hazard Waste Management
0630-352	Industrial Wastewater Management
0630-354	Air Emissions Management
1006-202	Concepts in Environmental Science
1006-203	Environmental Science Field Studies
1001-340	General Ecology
1001-471	Freshwater Ecology
1001-567	Environmental Microbiology
1015-520	Environmental Chemistry
1015-521	Atmospheric Chemistry
1015-522	Aquatic Toxicology and Chemistry
1029-301	Introduction to Polymer Technology

* Each of the listed courses has a chemistry course prerequisite.
† Other elective courses may be appropriate with minor adviser approval.
‡ The first core course in the minor, Chemical Process Analysis (0309-230), may be taken concurrently with the final course in the calculus sequence (e.g., 1016-232 or 1016-283). The remaining two core courses require Differential Equations (e.g., 1016-304, 1016-306).

Chemistry

L. Paul Rosenberg, Department Head
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Brenda Mastrangelo, Academic Adviser
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Students have the opportunity to complete a minor in chemistry in order to build a secondary area of expertise in support of their program or other areas of interest.

Prerequisites:	
1011-215, 216	General and Analytical Chemistry I, II
1011-205, 206	Chemical Principles Laboratory I, II
1011-217, 227	General and Analytical Chemistry III and Laboratory
Required Courses:	
1013-231, 232, 233	Organic Chemistry I, II, III
1013-235, 236, 237	Organic Chemistry Laboratory I, II, III

Elective Courses:

Students choose a minimum of three courses (12 quarter credit hours) from the list below. These credits must be in courses not required by the student's home program. At least one course must be 400-level or above.

1008-312, 319	Analytical Chemistry: Separations and Laboratory
1008-261, 265	Quantitative Analysis I and Laboratory
1008-262, 266	Quantitative Analysis II Laboratory
1008-311, 318	Instrumental Analysis and Laboratory
1009-502	Biochemistry: Conformation and Dynamics
1009-503	Biochemistry: Metabolism
1009-504	Biochemistry: Nucleic Acids
1009-505	Biochemistry: Experimental Techniques
1014-441, 445	Chemical Thermodynamics and Laboratory
1014-442, 446	Quantum Chemistry and Laboratory
1014-443, 447	Chemical Kinetics and Laboratory
1012-562	Inorganic Chemistry I
1012-563	Inorganic Chemistry II
1012-765	Preparative Organic Chemistry Laboratory
1008-511, 621	Advanced Instrumental Analysis and Laboratory
1029-501	Organic Chemistry of Polymers
1029-502	Polymer Chemistry: Chains and Solutions
1029-503	Polymer Chemistry: Properties of Bulk Materials
1029-505	Synthesis of High Polymers Lab

Other chemistry courses at the 300-level or above may be taken as part of the minor with written permission of the department chair.

Communication and Culture

Grant Cos, Minor Adviser
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The communication and culture minor promotes critical reflection on the requirements of a more democratic culture by giving attention to subjects such as, but not limited to, class, race, ethnicity, identity, gender, public sphere, law, and health care. This minor is closed to students enrolled in the following BS programs: professional and technical communication, advertising and public relations, and journalism.

Required Courses—*Choose two of the following:*

0502-444	Technical Writing
0535-416	Newswriting
0535-446	Writing the Technical Manual
0535-480	Human Communication
0535-481	Persuasion
0535-482	Mass Communications
0535-483	Small Group Communication
0535-580	International Media

Electives—*Choose three of the following:*

0535-410	Computer-Mediated Communication
0535-411	Health Communication
0535-414	Interpersonal Communication
0535-420	Argument and Discourse
0535-450	Visual Communication
0535-465	The Rhetoric of Political Campaigns
0535-484	Rhetoric of Race Relations
0535-490	Persuasion and Social Change
0535-520	Intercultural Communication

Computer Engineering

Andreas Savakis, Minor Adviser
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Roy Melton, Minor Adviser
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Computer engineering is an interdisciplinary field that involves the study and application of software, hardware, and systems. This minor exposes students to the fundamentals of computer engineering and provides a foundation for the exploration of specialized subjects in computer engineering upper-level courses and professional electives.

Prerequisites:

4003-232	Computer Science II or equivalent

Plus one of the following courses:

1016-281	Project-Based Calculus I
1016-272	Calculus B
1016-265	Discrete Math I

Required Courses:

0306-341	Introduction to Digital Systems
0306-250	Assembly Language
0306-550	Computer Organization

Electives—*Choose two of the following:*

0306-351	Hardware Description Languages
0306-381	Applied Programming
0306-451	Digital Signal Processing
0306-551	Computer Architecture
0306-553	Digital Control Systems
0306-560	Interface and Digital Electronics
0306-561	Digital Systems Design
0306-710	Network Modeling Design and Simulation
0306-615	Wireless Networks
0306-620	Design Automation of Digital Systems
0306-722	Advanced Computer Architecture
0306-624	High-Performance Architectures
0306-630	Introduction to VLSI Design
0306-631	Advanced VLSI Design
0306-632	Low-Power Design
0306-658	Fault-Tolerant Systems
0306-663	Embedded and Real-Time Systems
0306-664	Modeling of Embedded and Real-Time Systems
0306-672	Special Topics in Computer Engineering
0306-675	Robotics
0306-676	Robust Control
0306-684	Digital Image Processing Algorithms
0306-685	Computer Vision
0306-694	Data and Computer Communications

Computer Science

Henry A. Etlinger, Minor Adviser
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The computer science minor establishes a foundation in basic programming fundamentals with an emphasis on modern programming practices. The minor provides students with an opportunity to expand their programming foundation by delving more deeply into programming or by sampling selected theoretical or applied areas within computer science. The minor adviser will evaluate a student's prior computing background and advise the student regarding initial placement and course prerequisites. A student must complete at least 20 quarter credit hours of approved computer

science courses from the department of computer science. At least 12 quarter credit hours must be courses not required by a student's home department.

Prerequisites: None (However, the 4003-241, 242, 243 sequence is a prerequisite to 4003-334, a course that is either a direct or indirect prerequisite for many computer science courses.)

Electives—*Choose five of the following:*

4003-241	Problem-Based Introduction to Computer Science
4003-242	Data Structures for Problem Solving
4003-243	Object-Oriented Programming
4003-334	Computer Science 4
4003-345	Computer Organization
4003-380	Introduction to Computer Science Theory
4003-389	Honors Introduction to Computer Science Theory
4003-406	Systems Programming I
4003-420	Data Communications and Networks I
4003-440	Operating Systems I
4003-450	Programming Language Concepts
4003-451	XML: Architecture, Tools, and Techniques
4003-455	Artificial Intelligence
4003-457	Introduction to Computer Vision
4003-471	Privacy and Security
4003-481	Complexity and Computability
4003-482	Cryptography
4003-485	Database Concepts
4003-486	Database System Implementation
4003-506	Systems Programming 2
4003-515	Analysis of Algorithms
4003-520	Computer Architecture
4003-531	Parallel Computing 1
4003-532	Parallel Computing 2
4003-541	Data Communications and Networks 2
4003-542	Data Communications and Networks 3
4003-543	Ad Hoc Networks
4003-544	Operating Systems 2
4003-552	Artificial Intelligence for Interactive Environments
4003-553	Biologically Inspired Intelligence Systems
4003-558	Advanced Computer Vision
4003-561	Programming Skills
4003-570	Computer Graphics 1
4003-571	Computer Graphics 2
4003-572	Computer Animation Algorithms and Techniques
4003-573	Procedural Shading
4003-580	Language Processors
4003-590	Seminar in Computer Science

Construction Management

John Morelli, Minor Adviser
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The construction management minor offers courses covering building construction, cost estimating, construction project management, and construction safety. Students may choose electives to individualize the curriculum to match their interests.

Required Courses:

0608-422	Elements of Building Construction
0608-509	Construction of Cost Estimating
0608-560	Construction Project Management
0608-544	Contracts and Specs

Electives—*Choose three of the following:*

0608-500	Labor Relations
0608-460	Construction Equipment
0608-444	Mechanical and Electrical Equipment for Buildings
0633-504	Construction Safety

Creative Writing

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This minor provides theoretical and historical background and models to assist students as they develop their own creative writing abilities.

Prerequisite:

0502-227	Writing (or equivalent)

Electives — *Choose three of the following:*

0502-451	Creative Writing: Poetry
0502-452	Creative Writing: Prose Fiction
0502-453	Advanced Creative Writing*
0502-459	Creative Nonfiction
0502-461	Editing the Literary Magazine

Choose two of the following:

0504-441	Art of Poetry
0504-442	The Short Story
0504-443	The Novel
0504-460	Modern Poetry
0504-482	Science Fiction

* Students in the creative writing minor have the option to take one of the creative writing courses and then take Advanced Creative Writing Workshop (0502-453) twice in order to complete an extended writing project.

Criminal Justice

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The minor in criminal justice provides a foundation in the formal process of social control through the criminal justice system, including how behavior is defined as criminal, how crime is measured, and how society responds to crime through law enforcement, courts, and corrections. This minor is closed to students enrolled in the criminal justice program.

Required Course:

0501-400	Criminology

Electives—*Choose four of the following:*

0501-405	Major Issues in the Criminal Justice System*
0501-406	Technology in Criminal Justice
0501-415	Domestic Violence
0501-440	Juvenile Justice
0501-441	Corrections
0501-443	Law Enforcement in Society
0501-444	Concepts in Criminal Law
0501-445	Minority Groups and the Criminal Justice System
0501-446	Women and Crime
0501-456	Courts
0501-507	Computer Crime
0501-511	Alternatives to Incarceration
0501-517	Comparative Criminal Justice Systems
0501-518	Crime and Justice in the Community
0501-522	Victimless Crime
0501-523	Crime and Violence

* Topics may vary

Database Design and Development

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Database design and development provides students with the advanced knowledge and skills necessary to design, develop, and manage database systems within a broad range of domains. Data is an important component of any organization and the management and storage of that data is critical. Computing professionals with specialized knowledge of database systems are needed to ensure that data is being stored in an efficient, accessible, yet secure manner that meets the needs of the organization.

Prerequisites:	
Students should have course work in discrete mathematics and have completed a three-course sequence in programming before beginning courses for this minor.	
Required Course—*Choose one of the following:*	
4002-360	Introduction to Database and Data Modeling
4003-385	Concepts of Data Management
Electives—*Complete all four of the following:*	
4002-461	Fundamentals of Data Modeling
4002-484	Fundamentals of Database Client/Server Connectivity
4002-485	Fundamentals of DBMS Architecture and Implementation
4002-489	Data Warehousing

Deaf Cultural Studies

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The Deaf cultural studies minor offers students the opportunity to engage in a focused program of study in the emerging field of Deaf cultural studies. Students may pursue the minor regardless of their level of proficiency in American Sign Language (ASL), and any ASL or Deaf culture course, except for ASL I, can be applied toward the minor. ASL I, or equivalent skills, is a prerequisite for individuals who are not qualified to enroll in ASL II to begin the sequence. Students must have completed ASL III, be fluent in ASL, and/or have approval of the instructor to enroll in American Sign Language Literature or Linguistics of American Sign Language, both of which are taught in ASL.

Prerequisite	
0525-390	Beginning American Sign Language I
Required Course—*Choose one of the following:*	
0525-391	American Sign Language II
0525-385	Linguistics of American Sign Language
0525-386	American Sign Language Literature
Electives—*Choose four of the following:*	
0525-392	American Sign Language III
0504-545	Deaf American Literature
0505-479	Special Topics: Deaf Art and Cinema
0507-463	American Deaf History
0507-476	Diversity in the Deaf Community
0507-477	Oppression in Lives of Deaf People
0515-529	Deaf Culture in America

Digital Business

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Digital business represents the impact of new technologies on business practice, products, and services. Today, technologies such as social computing and mobile devices are dramatically changing the behaviors and characteristics that lead individuals and organizations to success. Students completing a digital business minor will enhance their program of study with a focus on these new technologies and applications in business.

Required Courses	
0112-312	Building a Web Business
Electives—*Choose four of the following:*	
0102-415	Digital Entrepreneurship
0104-359	Financing New Ventures
0102-530	Managing Innovation and Technology
0105-363	Principles of Marketing
0105-440	Internet Marketing
0112-340	Database Management Systems
01xx-xxx	Digital Business Seminars

Economics

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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. This minor is closed to students enrolled in the economics program.

Prerequisite—*Choose one of the following:*	
0511-211	Principles of Microeconomics
0511-325	Honors Economics
Required Course:	
0511-402	Principles of Macroeconomics
Electives	
Choose three of the following theory and policy courses:	
0511-440	Urban Economics
0511-441	Economics of Human Resources
0511-442	Contemporary International Economic Problems
0511-443	Current American Macroeconomic Problems
0511-444	Public Finance
0511-445	Survey of Economic Thought*
0511-448	Economics of Less Developed Countries*
0511-449	Comparative Economic Systems*
0511-450	Benefit-Cost Analysis
0511-452	Monetary Analysis and Policy*
0511-453	Intermediate Microeconomic Theory
0511-454	International Trade and Finance*
0511-455	Intermediate Macroeconomic Theory*
0511-456	Industrial Organization
0511-459	Managerial Economics
0511-461	Seminar in Applied Economics
0511-466	Health Care Economics
0511-467	Economics of Native America
0511-480	Economic Role of Women
0511-481	Environmental Economics
0511-484	Natural Resource Economics
0511-571	Honors Seminar in Economics
Choose one of the following quantitative courses:	
0511-457	Applied Econometrics†
0511-458	Economic Forecasting‡
0511-460	Mathematical Methods: Economics§
0511-464	Game Theory with Economic Applications

* Prerequisite: Principles of Macroeconomics (0511-402)
† Prerequisites: Calculus for Maangement Science (1016-226) and Data Analysis I (1016-319)
‡ Prerequisites: Principles of Macroeconomics (0511-402), Calculus for Maangement Science (1016-226), and Data Analysis I (1016-319)
§ Prerequisite: Calculus for Maangement Science (1016-226)

Electrical Engineering

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A minor in electrical engineering exposes students to the fundamentals of electrical engineering and provides a foundation to explore specialized material in electrical engineering professional electives or graduate courses.

Prerequisites:	
1016-283	Calculus III
1017-313	University Physics III

Additional prerequisites, depending on choice of electrical engineering elective courses, may include:

0301-344	Matlab and C for Electrical Engineers
1016-328	Engineering Mathematics
1016-345	Probability and Statistics for Engineers
1016-420	Complex Variables
1016-351	Probability and Statistics
Required Courses:	
0301-381	Circuits I
0301-382	Circuits II
Electives—*Choose three of the following:*	
0301-240	Digital Systems
0301-365	Microcomputer Systems
0301-347	Computer Architecture
0301-453	Linear Systems I
0301-473	EM Fields I
0301-474	EM Fields II
0301-481	Electronics I
0301-482	Electronics II
0301-514	Control Systems
0301-531	Mechatronics
0301-534	Communications
0301-545	Digital Electronics
0301-554	Linear Systems II

Note: All 600-level electrical engineering courses must meet prerequisites.

Engineering Management

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The minor in engineering management integrates technological and managerial expertise while focusing on the management of the engineering and technological enterprise. Engineering management is concerned with understanding the technology involved in an engineering project and the management process through which the technology is applied. This minor supports the dual role of the engineering manager as both a technologist and a manager. The student gains a background in areas commonly needed in this role, such as engineering management, engineering economics, and accounting, in addition to industrial engineering expertise.

Prerequisites:	
1016-314	Engineering Statistics (or equivalent)
1016-318	Boundary Value Problems and Matrices
or	
1016-328	Engineering Math
or	
1016-331	Matrix Algebra (or equivalent)
Required Courses:	
0303-520/620	Engineering Economy
0303-481	Engineering Management
0101-494	Cost Accounting for Technical Organizations
Electives*—*Choose two of the following:*	
0303-401	Operations Research
0303-402	Production Control
0303-422	Systems and Facilities Planning
0303-503	Systems Simulation
0303-510	Applied Statistical Quality Control
0303-626	Contemporary Production Systems
0303-703	Supply Chain Management
0303-704	Logistics Management
0303-734	Systems Safety Engineering
0303-758	Design of Experiments
0303-765	Databases for Information Systems
0303-766	Manufacturing Systems
0303-770	Design of Experiments
0303-784	Systems Project Management

* Other elective courses may be appropriate with minor adviser approval.

Entrepreneurship

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The entrepreneurship minor allows students to learn business skills that can be applied to any professional field. Students will gain insight into the customer requirements and financial implications involved in taking a product or service from idea to implementation.

Required Course:	
0102-490	Entrepreneurship
Choose one of the following entrepreneurial experiences:	
0102-545	Applied Entrepreneurship and Commercialization
0102-547	Field Experience in Business Consulting
Other approved field experience:	
	Kate Gleason College of Engineering Senior Design Capstone
	RIT Student Incubator
	Faculty-approved field experiences
Electives—*Choose three of the following:*	
0101-301	Financial Accounting
0101-302	Management Accounting
0101-494	Cost Accounting in Technical Organizations
0102-250	World of Business
0102-415	Digital Entrepreneurship
0102-530	Managing Innovation and Technology
0104-359	Financing New Ventures
0105-363	Principles of Marketing
0105-440	Internet Marketing
0609-410	Patents and Trade Secrets
0610-517	Product Ideation and Concept Solution
0610-518	Development and Design of New Products
0610-519	Product Realization
2035-410	Consumer Product Design II
2035-506	Design Collaboration
2035-512	Advanced Product Design
2035-527	Package Design
4002-455	Technology Transfer
4002-460	Needs Assessment

Environmental Modeling

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The environmental modeling minor introduces students to the process of spatial modeling as part of a toolset for investigating environmental issues and to provide opportunities to apply these skills through advanced course work. The required core courses are designed to give students a solid foundation of environmental issues and concepts. Central to this minor are the development of geographic information systems (GIS) and remote sensing techniques, problem-solving skills, and an understanding of the multiple stakeholder perspectives often involved with environmental issues. Students interested in pursuing employment or an advanced degree with an environmental focus will find this minor beneficial.

Required Courses:	
0508-460	Environment and Society
1006-202	Concepts of Environmental Science
1006-203	Environmental Science Field Skills
Electives—*Choose two of the following:*	
1006-350	Application of Geographic Information Systems
1006-450	Raster Application of GIS
1006-750	Ecological and Environmental Applications of GIS
1051-420	Environmental Applications of Remote Sensing

Environmental Science

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The environmental science minor introduces students to the interdisciplinary nature 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 stakeholder perspectives often involved with environmental issues. Students interested in becoming "citizen scientists" or pursuing employment or an advanced degree with an environmental focus will find this minor beneficial.

Prerequisites:	
1001-251	Introduction to Biology I*
1001-252	Introduction to Biology II*
1001-253	Introduction to Biology III*
1011-215	General and Analytical Chemistry I†
1011-205	Chemistry Principles I Lab†
1011-216	General and Analytical Chemistry II†
1011-206	Chemistry Principles II Lab†
1011-202	Fundamentals of Organic Chemistry†
1011-207	Introduction to Organic Chemistry Lab†
Required Courses:	
0508-460	Environment and Society
1006-202	Concepts of Environmental Science
1006-203	Environmental Science Field Skills
Electives—*Choose two of the following:*	
1001-340	General Ecology
1001-375	Galapagos: Evolution and Biogeography
1001-420	Plant Ecology
1001-471	Freshwater Ecology
1001-475	Conservation Biology
1015-520	Environmental Chemistry

* Required for advanced biology courses
† Required for advanced chemistry courses

Environmental Studies

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This minor provides students with opportunities for the in-depth analysis of global and regional environmental issues, their causes, and their potential solutions. The minor features an emphasis on sustainability and holistic thinking. In particular, a required 500-level seminar will serve 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.

Required Course—*Choose one of the following†:*	
0508-570	Environmental Studies Seminar
0508-530	Seminar in Science, Technology, and the Environment
Electives—*Choose four of the following:*	
0507-464	Environmental Disasters in American History
0508-443	Face of the Land
0508-460	Environment and Society
0508-463	Great Lakes I
0508-464	Great Lakes II*
0508-482	Energy and the Environment
0508-483	Environmental Values
0508-484	Environmental Policy
0508-487	Special Topics: Environmental Studies
0508-488	History of Ecology and Environmentalism
0508-489	History of the Environmental Sciences
0508-490	Biodiversity and Society
0508-491	Sustainable Communities
0508-500	Science, Technology, and Society Classics
0508-520	Historical Perspectives on Science and Technology**
0508-540	Science and Technology Policy Seminar††
0509-453	Environmental Philosophy
0510-449	Sustainable Development
0511-481	Environmental Economics‡
0511-484	Natural Resource Economics‡
0515-449	Population and Society§
0521-451	Energy Policy

* Great Lakes I (0508-463) is a prerequisite for this course.
† These courses can be taken only if the student has already taken at least two courses from the electives list. Typically these courses would be the last courses taken in the minor sequence.
‡ Principles of Microeconomics (0511-211) is a prerequisite for these courses.
§ Cultural Anthropology (0510-210), Foundations of Sociology (0515-210), or an equivalent is a prerequisite for this course.
** Prerequisite: any two of the History of Science or Technology courses approved by the department.
†† Prerequisite: 0508-441, 0508-484, or 0521-400

European History

Rebecca Edwards, Minor Adviser
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The European history minor emphasizes salient characteristics of Western civilization from the French Revolution to the contemporary era.

Required Courses—*Choose five of the following:*	
0507-443	European Social and Intellectual History Since 1600
0507-444	Strategy and Diplomacy: Europe
0507-446	Europe Since 1945 and the European Union
0507-448	History of Russia to 1917

0507-449	History of Russia Since 1917
0507-450	Stalin, Mussolini, and Hitler
0507-473	European Deaf History
0507-488	Modern Germany

Exercise Science

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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.

Prerequisites:	
1001-201	General Biology I
1001-202	General Biology II
1001-203	General Biology III
or	
1001-251	Introduction to Biology I
1001-252	Introduction to Biology II
1001-253	Introduction to Biology III
Required Courses:	
1026-350	Anatomy and Physiology I
1026-360	Anatomy and Physiology II
1026-305	Sports Physiology and Life Fitness
1026-306	Fitness Prescription and Programming
Electives—*Choose one of the following:*	
1026-307	Exercise Prescription for Special Populations
0620-300	Sports Nutrition

Finance

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The finance minor helps students create value in any type of business organization. The minor will broaden a student's learning experiences and professional opportunities by focusing on corporate finance and investment topics in more depth.

Required Courses:	
0101-301	Financial Accounting
0104-350	Corporate Finance
Electives—*Choose three of the following:*	
0104-220	Personal Financial Management
0104-359	Financing New Ventures
0104-361	Financial Institutions and Markets
0104-452	Managing Corporate Assets and Liabilities
0104-453	Intermediate Investments
0104-460	Financial Analysis and Modeling
0104-504	Finance in a Global Environment
0104-505	Advanced Corporate Financial Planning
0104-520	Introduction to Options and Futures
0104-554	Seminar in Finance

Game Design

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Game design allows students to explore the construction and design decisions faced by professionals in the games industry, and invites them to take a critical view of current games and their underlying principles. Students will create their own works at a level that is sophisticated enough to explore design.

Required Courses:	
4080-346	2D Animation for Interactive Media
4080-230	Introduction to Programming for New Media
4080-231	Programming II for New Media
4080-380	Fundamentals of Game Design and Development I
Electives—*Choose one of the following:*	
4080-381	Fundamentals of Game Design and Development II
4080-434	Programming for Digital Media
4080-347	3D Modeling and Animation for Interactive Media

Game Design and Development

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The game design and development minor allows students to explore the construction and design decisions faced by professionals in the gaming industry, and invites them to take a critical view of current games and their underlying principles.

Required Courses:	
4080-330	Interactive Digital Media
4080-380	Fundamentals of Game Design and Development I
4080-381	Fundamentals of Game Design and Development II
4080-387	Data Structures and Algorithms for Game Design and Development I
4080-487	Data Structures and Algorithms for Game Design and Development II

Historical Perspectives on Science and Technology

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This minor exposes students to a rigorous analysis of the history of science and technology and emphasizes history as a distinctive way of thinking. Students augment their degree program with a series of courses analyzing the historical development, impact, and significance of science and technology. Having completed the minor, students entering such professional fields as science, engineering, law, journalism, and public affairs will be well-prepared to deal with cross-disciplinary, historical questions involving the social, cultural, and environmental contexts of modern science and technology.

Required Course*—*Choose one of the following:*	
0508-520	Historical Perspectives on Science and Technology Seminar
0508-530	Seminar in Science, Technology and the Environment
Electives—*Choose four of the following:*	
0508-440	History of Science
0508-442	History of American Technology
0508-446	Makers of Modern Science
0508-449	History of Women in Science and Engineering

0508-450	History of Chemistry
0508-488	History of Ecology and Environmentalism
0508-489	History of Environmental Sciences

* Please check course prerequisites.

Human Resource Management

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The human resource management minor provides students with the ability to market themselves as knowledgeable human resource managers in preparation for future leadership or management roles. The curriculum covers human resource management, international human resource management, understanding corporate culture, development of a learning organization, compensation and benefits, training design and delivery, employment law, and interview techniques.

Required Courses:	
Choose one of the following:	
0619-480	Human Resource Management
0113-400	Managing in the Global Environment
0626-427	Employment/Labor Law
Choose one of the following:	
0697-442	The Learning Organization
0102-320	Organizational Behavior
Electives—*Choose two of the following:*	
0626-554	International Human Resource Management
0626-234	Interview Techniques
0626-390	Compensation and Benefits
0626-428	Training Design and Delivery
0681-410	Introduction to Project Management
0697-431	Understanding Corporate Culture

Imaging Science

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Students have the opportunity for additional study in imaging science in order to build a secondary area of expertise in support of their program or other areas of interest.

Prerequisites:	
1017-311	University Physics I
1017-312	University Physics II
1017-313	University Physics III
1017-314	Modern Physics (if taking 1051-313)
1016-281	Project-Based Calculus I
1016-282	Project-Based Calculus II
1016-283	Project-Based Calculus III
4002-208	Introduction to Programming (or equivalent)
Required Courses:	
Non-imaging science component (up to 8 credits)	
1016-314	Engineering Statistics
1016-331	Linear Algebra I
1016-351	Probability
1016-352	Applied Statistics
1016-432	Linear Algebra II
Imaging science component (at least 12 credits)	
1051-300	Introduction to Imaging Systems

1051-303	Geometrical Optics
1017-455	Physical Optics
1051-313	Interactions Between Light and Matter
1051-320	Linear Mathematics for Imaging
1051-350	Vision and Psychophysics
1051-370	Radiometry
1051-402	Color Science
1051-361	Digital Image Processing I
1051-462	Digital Image Processing II
1051-463	Digital Image Processing III
1051-465	Detectors
1051-528	Design and Fabrication of a CCD Camera
1051-730	Magnetic Resonance Imaging

Industrial Engineering

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A minor in industrial engineering focuses on the design, improvement, and installation of integrated systems of people, material, equipment, and energy–utilizing skills in statistics, ergonomics, operations research, and manufacturing. This minor provides students with a background in areas commonly needed in this field.

Prerequisites:	
1016-314	Engineering Statistics (or equivalent)
1016-318	Boundary Value Problems and Matrices
or	
1016-328	Engineering Math
or	
1016-331	Matrix Algebra (or equivalent)
Required Courses—*Select at least three of the following:*	
0303-401	Operations Research
0303-402	Production Control
0303-415	Ergonomics
0303-422	Systems and Facilities Planning
0303-503	Simulation
0303-510	Applied Statistical Quality Control
0303-520, 620	Engineering Economy
Electives*—*Choose two of the following:*	
0303-481	Engineering Management
0303-516	Human Factors
0303-526	Design and Analysis of Production Systems
0303-630	Advanced Systems Integration
0303-703	Supply Chain Management
0303-704	Logistics Management
0303-711	Advanced Simulation Techniques
0303-727	Advanced Manufacturing Engineering
0303-731	Advanced Topics in Ergonomics/Human Factors
0303-732	Biomechanics
0303-734	Systems Safety Engineering
0303-765	Databases for Information Systems
0303-766	Manufacturing Systems
0303-770	Design of Experiments

* Other elective courses may be appropriate with minor adviser approval.

Industrial Environmental Management

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The industrial environmental management minor broadens the learning experiences and professional opportunities of students

in technical and business disciplines who have an interest in the management of wastewater, hazardous materials, and solids. Air emission management also is covered.

Prerequisites:	
1011-211	Chemical Principles I
1011-205	Chemical Principles I Lab
Required Courses:	
0630-201	Principles of Environmental Management
0630-352	Industrial Wastewater Management
0630-350	Solid and Hazardous Waste Management
0630-354	Air Emissions Management
Electives—*Choose one of the following:*	
0630-480	Environmental Regulatory Law
0630-505	Resource Reduction
0630-515	Corporate Environmental Management

International Business

Jerry Curnutt, Minor Adviser
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Students minoring in international business benefit from learning the global view of worldwide markets and the role of business in these markets.

Required Course:	
0113-310	Global Business: An Introduction
Electives—*Choose four of the following:*	
0104-504	Finance in a Global Environment
0105-363	Principles of Marketing
0113-400	Managing in the Global Environment
0113-430	Global Business: Special Issues
0113-450	Marketing in a Global Environment
0113-500	Strategy in the Global Environment

International Relations

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Dongryul Kim, Minor Adviser
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The international relations minor exposes students to the fundamental concepts and approaches of international relations. Issues of conflict, cooperation, continuity, and change are explained through a variety of subjects and cases.

Prerequisite*:	
0513-214	Introduction to International Relations

* The prerequisite may be waived if student elects to take Comparative Politics (0513-461) as one of the five courses of the minor.

Electives—*Choose five of the following:*	
0507-442	Contemporary Middle East
0507-444	Strategy and Diplomacy: Europe
0507-488	Modern Germany
0513-427	Evolutionary International Relations
0513-441	Politics in China
0513-443	Politics of Russia
0513-446	Politics in Developing Countries
0513-447	Human Rights and Global Perspectives
0513-449	Special Topics in Political Science
0513-453	American Foreign Policy
0513-461	Comparative Politics
0513-484	Government and Politics of Africa

0513-486	Comparative Politics in Latin America
0513-487	International Law and Organization
0513-488	War and the State
0513-489	Terrorism and Political Violence
0513-490	International Political Economy
0513-491	Politics of the Middle East
0513-492	Religion and International Politics
0513-493	Global Politics and the Environment
0513-494	Comparative Public Policy
0513-496	Government and Politics in East Asia

Journalism

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The journalism minor provides students with a foundation in the professional study and practice of journalism. It provides a broad perspective that includes an introduction to U.S. forms of mediated communication; historical, legal, and ethical issues of specific concern to journalism; and learning and practice in writing in a journalistic style. This minor is closed to students enrolled in the journalism program.

Required course:	
0535-482	Mass Communications
Electives–*Choose four of the following:*	
0535-405	Information Gathering
0535-416	Newswriting
0535-417	Newswriting II
0535-470	Law and Ethics of the Press
0535-472	News Editing
0535-475	eJournalism
0535-532	Professional Writing

Legal Studies

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Laverne McQuiller-Williams, Minor Adviser
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The minor in legal studies is for students interested in the study of law and legal institutions and in the relationship of law to other aspects of society and culture. The law extends throughout contemporary political, social, and economic systems, playing an important role in shaping the conduct of life for both individuals and institutions. It is important for students to understand the forces that shape law, the ways laws have been used and understood by a variety of people in differing historical circumstances, and the consequences of law for contemporary life. Political, sociological, historical, and philosophical approaches to legal phenomena are included in the course of study. Recognizing the critical role that law plays in societies, the minor in legal studies is designed to guide students to courses that will deepen and expand their understanding of law as practiced, especially its influence on social and economic institutions.

Required Course:	
0513-464	Law and Society

Electives—*Choose two courses from each group*	
Group A: Theoretical and Historical Approaches to Law	
0501-444	Concepts in Criminal Law

0501-522	Victimless Crime
0507-446	American Slavery, American Freedom
0507-467	Disabilities in American History
0507-495	The Civil Rights Movement in 20th Century U.S. History
0509-446	Philosophy of Law
0513-457	Constitutional Law
0513-463	First Amendment, Liberty, and Deliberative Democracy
0513-514	Political Theory
0515-509	Social Policy
0535-448	Rhetoric of Free Speech
Group B: Operations and Impacts of Law	
0501-402	Crime, Justice, and Social Diversity
0501-405	Major Issues in the Criminal Justice System*
0501-409	Legal Rights of the Offender
0501-456	Courts
0501-506	Evidence
0501-527	Seminar in Law
0508-484	Environmental Policy
0513-447	Human Rights and Global Perspectives
0513-456	Judicial Process
0513-460	Constitutional Rights and Liberties
0513-465	Modern Constitutionalism, Equality, and Liberty
0513-487	International Law and Organizations

* Major Issues (0501-405) may include any of the following topics: Fundamentals of Legal Research I, Cyberlaw, Issues in Criminal Prosecution, or Federal Crime and Justice.

Literary and Cultural Studies

Elena Sommers, Minor Adviser
(585) 475-4417, ersgla@rit.edu

The English department offers both traditional and contemporary approaches to the study of literary and nonliterary texts including, but not limited to, imaginative fiction, nonfiction, poetry, visual culture, and new media. This minor allows students to pursue a course of study specifically tailored to individual interests and needs. Those who select this minor will work closely with a faculty adviser to design a five- to six-course grouping based on interests in particular authors, themes, histories, genres, geographies, media, and/or interpretive and analytical methodologies. All of the courses are writing intensive and offer opportunities for sustained writing and communication practice.

Prerequisites:	
0504-227	Writing (or equivalent)
Electives—*Choose one of the following:*	
0504-440	Drama/Theater
0504-441	The Art of Poetry
0504-442	The Short Story
0504-443	The Novel
Electives—*Choose four of the following:*	
0504-425	Great Authors
0504-435	Global Literature
0504-436	The Graphic Novel
0504-444	Film as Literature
0504-447	Special Topics
0504-448	Biographical Literature
0504-460	Modern Poetry
0504-462	Literature and Technology
0504-464	Mythology and Folklore
0504-465	Viking Myth and Saga
0504-469	American Literature
0504-476	Immigrant Voices in American Literature

0504-479	The Latino Experience in Literature
0504-480	Women's Studies in Language and Literature
0504-482	Science Fiction
0504-545	Deaf American Literature

Management

Jerry Curnutt, Minor Adviser
(585) 475-4713, jhcbbu@rit.edu

The management minor provides a solid introduction to the world of general business management.

Required Course:	
0102-320	Organizational Behavior
Electives—*Choose four of the following:*	
0102-250	The World of Business*
0102-415	Digital Entrepreneurship
0102-438	Business Ethics
0102-455	Human Resources Management
0102-460	Leadership in Organizations
0102-490	Entrepreneurship
0102-530	Managing Innovation and Technology
0102-547	Field Experience in Business Consulting
0102-554	Seminar in Management
0113-400	Managing in the Global Environment

* If selected, this course must be taken as one of the first two courses of the minor.

Management Information Systems

Jerry Curnutt, Minor Adviser
(585) 475-4713, jhcbbu@rit.edu

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 major.

Required Course:	
0112-370	Systems Analysis and Design
Electives—*Choose four MIS courses (0112-300 or above)*	

Marketing

Jerry Curnutt, Minor Adviser
(585) 475-4713, jhcbbu@rit.edu

Marketing, sales, and customer-oriented aspects of the marketing minor will broaden the student's learning experiences and professional opportunities by creating a second focus in marketing.

Required Course:	
0105-363	Principles of Marketing
Electives—*Choose four of the following:*	
0105-440	Internet Marketing
0105-505	Buyer Behavior
0105-550	Marketing Management
0105-551	Marketing Metrics and Research
0105-559	Professional Selling
0105-560	Advertising and Promotion Management
0113-450	Marketing in the Global Environment

Mass Media Communication

Grant Cos, Minor Adviser
(585) 475-6646, gccgppt@rit.edu

The mass media communication minor provides an overview of the history, development, economics, and regulation of the mass media in the U.S. This minor is closed to students enrolled in the following BS programs: professional and technical communication, advertising and public relations, and journalism.

Required Courses—*Choose two of the following:*	
0502-444	Technical Writing
0535-416	Newswriting
0535-446	Writing the Technical Manual
0535-480	Human Communication
0535-481	Persuasion
0535-482	Mass Communications
0535-483	Small Group Communication
0535-580	International Media
Electives—*Choose three of the following:*	
0535-416	Newswriting
0535-421	Public Relations
0535-450	Visual Communication
0535-452	Uses and Effects of Mass Media
0535-470	Law and Ethics of the Press
0535-471	History of Journalism
0535-482	Mass Communications
0535-534	Communication and Documentary Film
0535-550	Film and Society

Mathematics

James Halavin, Minor Adviser
(585) 475-5140, jjhsma@rit.edu

The mathematics minor provides an opportunity for students to deepen their technical background and gain further appreciation for modern mathematical sciences.

Prerequisites:	
1016-281	Project-Based Calculus I
1016-282	Project-Based Calculus II
1016-283	Project-Based Calculus III (or equivalent)
Plus at least one of the following:	
1016-305	Multivariable Calculus
1016-265	Discrete Mathematics I

Required Courses:

To receive a minor in mathematics, students complete five courses from the list below with a minimum GPA of 2.0. At least three of these courses must be different from courses that are required by the student's home program, and at least one of the five courses must be from Group II. All required courses must be taken in the School of Mathematical Sciences.

Choose five of the following, with at least one from Group II:

Group I	
1016-306	Differential Equations
1016-318	Matrices and Boundary Value Problems
1016-328	Engineering Mathematics
1016-331	Linear Algebra I
1016-351	Probability
1016-365	Combinatorial Mathematics
1016-366	Discrete Mathematics II
1016-407	Dynamical Systems
1016-410	Vector Calculus
1016-420	Complex Variables
1016-451	Mathematical Statistics I
1016-452	Mathematical Statistics II
1016-461	Mathematical Modeling
1016-465	Linear Optimization
1016-466	Advanced Optimization
1016-565	Game Theory
1016-5xx	Choices through advising
Group II	
1016-411	Real Variables I
1016-412	Real Variables II
1016-432	Linear Algebra II
1016-467	Graph Theory
1016-485	Number Theory
1016-511	Numerical Analysis
1016-512	Numerical Linear Algebra
1016-531	Abstract Algebra I
1016-532	Abstract Algebra II

Mechanical Engineering

Alan Nye, Minor Adviser
(585) 475-6121, ahneme@rit.edu

Mechanical engineering is perhaps the most comprehensive of the engineering disciplines. The mechanical engineer's interests encompass the design of automotive systems, aerospace systems, bioengineering devices, and energy-related technologies. A minor in mechanical engineering exposes students to the core foundations of the discipline and is intended to help nonmajors explore high-technology careers and communicate effectively with engineers on project teams.

Prerequisites:	
1016-282	Project-Based Calculus II
or	
1016-273	Calculus C
1017-312	University Physics II
Required Courses:	
0304-336	Statics
0304-347	Mechanics of Materials
0304-413	Thermodynamics
0304-415	Fluid Mechanics
Electives—*Choose one of the following, or any 600-level mechanical engineering technical elective (must meet prerequisites):*	
0304-344	Materials Science
0304-359	Dynamics
0304-437	Design of Machine Elements
0304-514	Heat Transfer

Medical Informatics

Nicolas Thireos, Minor Adviser
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The field of health information technology, or medical informatics, is beginning a period of rapid growth fueled by the federal government's vision for universal adoption of electronic health records. As a result, a large number of jobs will be created in this field over the next decade. The availability of health data in electronic form will serve as the foundation for new and innovative IT applications. This minor will provide students with the opportunity to enhance and combine their knowledge of computing with knowledge of the medical field.

Required Courses:

4006-345	Medical Informatics Seminar
1026-301	Medical Terminology
4006-240	Introduction to Medical Informatics
4006-310	Developing Medical Applications*
4002-360	Introduction to Database and Data Modeling*
4006-410	The Electronic Health Record†

* A two-course programming sequence is a required prerequisite to these courses.
† Prerequisite: Introduction to Medical Informatics (4006-240).

Microelectronics and Nanofabrication

Michael Jackson, Minor Adviser
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This minor is designed to provide basic knowledge of microelectronics and nanofabrication to non-microelectronic engineering students from math and statistics, science, and other engineering disciplines. It is intended for students interested in career opportunities in microelectronics and nanotechnology that may involve working in the semiconductor industry. This program also prepares students to pursue graduate studies in microelectronics, microsystems engineering, novel semiconductor applications, and nanotechnology.

Prerequisites:	
1016-281, 282	Calculus I, II
1017-311	University Physics I
1011-208	College Chemistry
Required Courses:	
0305-221	Introduction to Micro/Nanolithography
0305-350	IC Technology
0305-643	Thin Film Processes
Electives—*Choose two of the following:†*	
0305-564, 574	Microlithography Systems, Lab*
0305-632	Silicon Process Integration
0305-650	CMOS Processing
0305-666, 676	Microlithography, Materials and Processes, Lab
0305-704	Semiconductor Process and Device Modeling
0305-707	Nanoscale CMOS and Beyond*
0305-731	Microelectronics Manufacturing I
0305-732	Microelectronics Manufacturing II
0305-830	Metrology for Yield and Failure Analysis
0305-870	Microelectromechanical Systems

* These electives are suitable for students with appropriate prerequisites from their major program.
† See minor adviser for additional elective options.

Military Studies and Leadership

Lt. Col. Mark A. Avery, Minor Adviser
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Lt. Col. Lynn Lubiak, Minor Adviser
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The minor in military studies and leadership provides students with the opportunity to learn about military officer training and its mission to develop leaders for tomorrow's armed forces. Courses promote leadership and management that can be employed in any career field, along with courses analyzing the military's role in national security affairs and foreign policy.

Required Courses:

Group 1—*Choose any combination from Group 1 to earn a minimum of 3 credit hours.*	
0650-210	The Air Force Today I
0650-211	The Air Force Today II
0650-212	The Air Force Today III
0640-201	Introduction to Military Science (2)
0640-202	Introduction to Military Leadership (2)
0640-203	Introduction to Tactical Leadership (2)
Group 2—*Choose any combination from Group 2 to earn a minimum of 3 credit hours.*	
0519-201	History of Airpower I
0519-202	History of Airpower II
0519-203	History of Airpower III
0640-301	Military Geography (2)
0640-302	Psychology and Leadership (2)
0640-303	The Military and American Society (2)
Group 3—*Choose any combination from Group 3 to earn a minimum of 8 credit hours.*	
0102-310	Air Force Management and Leadership I
0102-311	Air Force Management and Leadership II
0640-401	Military Tactics (3)
0640-402	Military Communications (3)
0640-403	Military Operations (3)
Group 4—*Choose any combination from Group 4 to earn a minimum of 3 credit hours.*	
0513-401	National Security Forces I
0640-501	Army Training System (3)
0640-502	Military Administration and Logistics Management (3)
0640-503	Military Ethics (3)
Electives—*Choose any of the above courses to earn a minimum of 3 credit hours.*	

Modern Language

This minor provides two full years of modern language instruction to prepare students for living and working within an intercultural society both at home and abroad. Students may choose a modern language minor in Arabic, Chinese, French, German, Italian, Japanese, Russian, or Spanish. Students must take five consecutive language courses beyond the introductory prerequisite language course.

Students with some proficiency in the language must take the placement test in order to determine the appropriate level course.

Arabic

Diane Forbes, Minor Adviser
(585) 475-6765, djfgsl@rit.edu

Prerequisite:	
0525-400	Beginning Arabic I
Required Courses—*Choose five of the following:*	
0525-401	Beginning Arabic II
0525-402	Beginning Arabic III
0525-403	Intermediate Arabic I
0525-404	Intermediate Arabic II
0525-405	Intermediate Arabic III
0525-406	Advanced Arabic I
0525-407	Advanced Arabic II
0525-408	Advanced Arabic III

Chinese

Hiroko Yamashita, Minor Adviser
(585) 475-6074, hxygsl@rit.edu

Prerequisite:	
0525-420	Beginning Chinese I
Required Courses—*Choose five of the following:*	
0525-421	Beginning Chinese II
0525-422	Beginning Chinese III
0525-423	Intermediate Chinese I
0525-424	Intermediate Chinese II
0525-425	Intermediate Chinese III
0525-426	Advanced Chinese I
0525-427	Advanced Chinese II
0525-428	Advanced Chinese III

French

Philippe Chavasse, Minor Adviser
(585) 475-3158, pxcgsl@rit.edu

Prerequisite:	
0525-440	Beginning French I
Required Courses—*Choose five of the following:*	
0525-441	Beginning French II
0525-442	Beginning French III
0525-443	Intermediate French I
0525-444	Intermediate French II
0525-445	Intermediate French III
0525-446	Advanced French I
0525-447	Advanced French II
0525-448	Advanced French III

German

Wilma Wierenga, Minor Adviser
(585) 475-6829, wvwgsl@rit.edu

Prerequisite:	
0525-460	Beginning German I
Required Courses—*Choose five of the following:*	
0525-461	Beginning German II
0525-462	Beginning German III
0525-463	Intermediate German I
0525-464	Intermediate German II
0525-465	Intermediate German III
0525-466	Advanced German I
0525-467	Advanced German II
0525-468	Advanced German III

Italian

Elisabetta D'Amanda, Minor Adviser
(585) 475-6522, exdgla@rit.edu

Prerequisite:	
0525-500	Beginning Italian I
Required Courses—*Choose five of the following:*	
0525-501	Beginning Italian II
0525-502	Beginning Italian III
0525-503	Intermediate Italian I
0525-504	Intermediate Italian II
0525-505	Intermediate Italian III
0525-506	Advanced Italian I
0525-507	Advanced Italian II
0525-508	Advanced Italian III

Japanese

Yukiko Maru Leary, Minor Adviser
(585) 475-4558, yxmgsl@rit.edu

Prerequisite:	
0525-480	Beginning Japanese I
Required Courses—*Choose five of the following:*	
0525-481	Beginning Japanese II
0525-482	Beginning Japanese III
0525-483	Intermediate Japanese I
0525-484	Intermediate Japanese II
0525-485	Intermediate Japanese III
0525-486	Advanced Japanese I
0525-487	Advanced Japanese II
0525-488	Advanced Japanese III

Russian

Diane Forbes, Minor Adviser
(585) 475-6765, djfgsl@rit.edu

All students beginning the study of Russian must see the minor adviser for placement screening. This concentration is not open to native speakers of Russian.

Prerequisite:	
0525-540	Beginning Russian I
Required Courses—*Choose five of the following:*	
0525-541	Beginning Russian II
0525-542	Beginning Russian III
0525-543	Intermediate Russian I
0525-544	Intermediate Russian II
0525-545	Intermediate Russian III
0525-546	Advanced Russian I
0525-547	Advanced Russian II
0525-548	Advanced Russian III

Spanish

Diane Forbes, Minor Adviser
(585) 475-6765, djfgsl@rit.edu

Students with some proficiency must see the minor adviser for placement screening. This concentration is not open to fluent native speakers of Spanish.

Prerequisite:	
0525-560	Beginning Spanish I
Required Courses—*Choose five of the following:*	
0525-561	Beginning Spanish II
0525-562	Beginning Spanish III
0525-563	Intermediate Spanish I
0525-564	Intermediate Spanish II
0525-565	Intermediate Spanish III
0525-566	Advanced Spanish I
0525-567	Advanced Spanish II
0525-568	Advanced Spanish III

Modern Language and Culture

The modern language and culture minor consists of five courses: three language courses beyond Beginning Level I and two culture courses. The minor provides beginning and some intermediate level study of a modern language and appropriate courses in the culture of the nations where that language is most often used. The goal of this minor is to introduce students to the language, customs, and cultural aspects (e.g., history, art, literature, politics, anthropology, and music) of one particular country or area. Students will become aware of the relationship between language and culture and of the differences between their own language and culture and those of the country they choose to study.

Arabic

Diane Forbes, Minor Adviser
(585) 475-6765, djfgsl@rit.edu

Students with some proficiency must see the minor adviser and take the placement test to determine the appropriate level course. This minor is not open to fluent native speakers of Arabic.

Prerequisite:	
0525-400	Beginning Arabic I
Required Courses—*A sequence of three from the following:*	
0525-401	Beginning Arabic II
0525-402	Beginning Arabic III
0525-403	Intermediate Arabic I
0525-404	Intermediate Arabic II
0525-405	Intermediate Arabic III
0525-406	Advanced Arabic I
0525-407	Advanced Arabic II
0525-408	Advanced Arabic III
Electives—*Choose two of the following culture courses:*	
0505-487	Art of Islam: The Arabic Tradition
0505-487	Art of Islam: Persian/Turkish/Mughal Traditions
0507-442	Contemporary Middle East
0510-484	Islamic Culture/Middle East

Chinese

Hiroko Yamashita, Minor Adviser
(585) 475-6074, hxygsl@rit.edu

Prerequisite:	
0525-420	Beginning Chinese I
Required Courses—*A sequence of three from the following:*	
0525-421	Beginning Chinese II
0525-422	Beginning Chinese III
0525-423	Intermediate Chinese I
0525-424	Intermediate Chinese II
0525-425	Intermediate Chinese III
0525-426	Advanced Chinese I
0525-427	Advanced Chinese II
0525-428	Advanced Chinese III
Electives—*Choose two of the following culture courses:*	
0525-439	Special Topics: Chinese
0505-469	Art of China, Korea, and Japan
0507-485	Foundations of Asian Civilization
0507-486	20th Century China and Japan
0507-487	Communist China
0513-441	Politics in China
0513-496	Government and Politics in East Asia

German

Wilma Wierenga, Minor Adviser
(585) 475-6829, wvwgsl@rit.edu

Prerequisite:	
0525-460	Beginning German I
Required Courses—*A sequence of three from the following:*	
0525-461	Beginning German II
0525-462	Beginning German III
0525-463	Intermediate German I
0525-464	Intermediate German II
0525-465	Intermediate German III
0525-466	Advanced German I
0525-467	Advanced German II
0525-468	Advanced German III
Electives—*Choose two of the following culture courses:*	
0525-477	Contemporary German Culture*
0525-479	Special Topics: Modern German Culture Through Film
0505-459	Era of Haydn and Mozart
0505-465	Special Topics: Mozart's Operas
0505-482	Beethoven
0505-483	Bach and the Baroque
0505-484	Romanticism in Music
0505-486	German Theater and Drama
0507-488	Modern Germany

* Contemporary German Culture (0525-477) is offered alternating summers in Marburg, Germany.

Italian

Elisabetta D'Amanda, Minor Adviser
(585) 475-6522, exdgla@rit.edu

Prerequisite:	
0525-500	Beginning Italian I
Required Courses—*A sequence of three from the following:*	
0525-501	Beginning Italian II
0525-502	Beginning Italian III
0525-503	Intermediate Italian I
0525-504	Intermediate Italian II
0525-505	Intermediate Italian III
0525-506	Advanced Italian I
0525-507	Advanced Italian II
0525-508	Advanced Italian III
Electives—*Choose two of the following culture courses:*	
0525-519	Contemporary Italian Culture*
0505-433	15th Century Art and Architecture of Florence and Rome
0504-434	16th Century Art and Architecture of Florence and Rome

* Contemporary Italian Culture (0525-519) is offered each summer in Italy.

Japanese

Yukiko Maru Leary, Minor Adviser
(585) 475-4558, yxmgsl@rit.edu

Prerequisite:	
0525-480	Beginning Japanese I
Required Courses—*A sequence of three from the following:*	
0525-481	Beginning Japanese II
0525-482	Beginning Japanese III
0525-483	Intermediate Japanese I
0525-484	Intermediate Japanese II

0525-485	Intermediate Japanese III
0525-486	Advanced Japanese I
0525-487	Advanced Japanese II
0525-488	Advanced Japanese III
Electives—*Choose two of the following culture courses:*	
0525-495	Japanese Culture in Print
0525-496	Structures of Japanese Language
0525-497	Languages in Japanese Society
0505-469	Art of China, Korea, and Japan
0507-468	The U.S. and Japan
0507-485	Foundations of Asian Civilization
0507-486	20th Century China and Japan
0507-489	Japan in the Modern World
0513-496	Government and Politics in East Asia

Russian

Diane Forbes, Minor Adviser
(585) 475-6765, djfgsl@rit.edu

Students with some proficiency must see the minor adviser and take the placement test to determine the appropriate level course. This minor is not open to fluent native speakers of Russian.

Prerequisite:	
0525-540	Beginning Russian I
Required Courses—*A sequence of three from the following:*	
0525-541	Beginning Russian II
0525-542	Beginning Russian III
0525-543	Intermediate Russian I
0525-544	Intermediate Russian II
0525-545	Intermediate Russian III
0525-546	Advanced Russian I
0525-547	Advanced Russian II
0525-548	Advanced Russian III
Electives—*Choose two of the following culture courses:*	
0504-485	Global Literature: Tolstoy
0505-435	Russian Art—10th through 20th Centuries
0507-448	History of Russia to 1917
0507-449	History of Russia Since 1917
0507-450	Stalin, Mussolini, and Hitler
0513-443	Politics of Russia
0513-444	International Studies: Cold War and Beyond

Spanish

Diane Forbes, Minor Adviser
(585) 475-6765, djfgsl@rit.edu

Students with some proficiency must see the minor adviser and take the placement test to determine the appropriate level course. This minor is not open to fluent native speakers of Spanish.

Prerequisite:	
0525-560	Beginning Spanish I
Required Coures—*A sequence of three from the following:*	
0525-561	Beginning Spanish II
0525-562	Beginning Spanish III
0525-563	Intermediate Spanish I
0525-564	Intermediate Spanish II
0525-565	Intermediate Spanish III
0525-566	Advanced Spanish I
0525-567	Advanced Spanish II
0525-568	Advanced Spanish III
Electives—*Choose two of the following culture courses:†*	
0525-576	Trauma and Survival in First-Person Narrative

0525-577	Screening the Hispanic Caribbean
0525-578	Women in the Hispanic World: Politics of Identity Formation
0525-579	Special Topics*
0507-445	Modern Latin America
0507-453	U.S. - Latin American Diplomatic History
0507-490	History of Mexico
0510-442	Cultures and Politics in Latin America
0510-444	Global Economy and the Grassroots
0513-486	Latin American Politics

* Special Topics (0525-579) may include the following: The Caribbean and Globalization, Cuban Film: Cultural and National Identity, Screening Hispanic Culture.
† With department approval: CIAS Art History: Latin American Art History I, II, plus one additional credit per course.

Modern World History

Rebecca Edwards, Minor Adviser
(585) 475-2406, rregsm@rit.edu

This minor provides a comparative perspective in modern world history.

Required Courses—*Choose five of the following, with at least one from each of the three groups:*	
Modern Europe	
0507-443	European Social and Intellectual History Since 1600
0507-444	Strategy and Diplomacy: Europe
0507-446	Europe Since 1945 and the European Union
0507-448	History of Russia to 1917
0507-449	History of Russia Since 1917
0507-450	Stalin, Mussolini, and Hitler
0507-473	European Deaf History
0507-488	Modern Germany
Modern Africa, Asia, and Latin America	
0507-412	Modern Japan in History, Fiction, and Film
0507-442	Contemporary Middle East
0507-445	Modern Latin America
0507-468	The United States and Japan
0507-485	Foundations of Asian Civilization
0507-486	20th Century China and Japan
0507-487	Communist China
0507-489	Japan in the Modern World
0507-490	History of Mexico
0507-496	Survey of African History
Modern America	
0507-402	History of American Women: 1848 to Now
0507-410	Terrorism, Intelligence, and War
0507-411	Origins of U.S. Foreign Relations
0507-440	U.S. Social and Intellectual History
0507-447	U.S. History Since 1945
0507-462	The Civil War and Reconstruction
0507-463	American Deaf History
0507-464	Environmental Disasters in American History
0507-465	Survey of African-American History
0507-466	American Slavery, American Freedom
0507-467	American Disability History
0507-474	America's National Parks
0507-475	Hands-on History
0507-495	The Civil Rights Movement in 20th Century U.S. History

Music and Technology

Carl Atkins, Minor Adviser
(585) 475-4439, cjagsh@rit.edu

The music and technology minor includes courses in music performance, music theory, music history, contemporary and historical instrument technology, acoustics, and audio engineering. The minor provides students who do not possess sufficient instrumental or vocal performance skills with an avenue to integrate their technological interests with music.

Required Courses:

0505-449	Music Theory I
0614-250	Fundamentals of Audio Engineering

Elective—*Choose one of the following:*

0614-325	Introduction to Digital Audio Production
0614-345	Intermediate Digital Audio Production
0618-206	Computers and Their Applications
4002-206	Web Foundations
4002-527	Digital Audio and Computer

Electives—*Choose two of the following:*

0505-442	Music in the United States
0505-447	The American Musical Theater
0505-448	20th Century American Music
0505-450	Music and the Stage
0505-454	Orchestra Repertoire and History
0505-455	Survey of Jazz
0505-459	Era of Haydn and Mozart
0505-461	World Music I
0505-462	World Music II
0505-463	Survey of African-American Music
0505-464	Blues as Personal and Social Commentary
0505-465	Special Topics: Mozart's Opera
0505-466	Sounds of Protest
0505-471	American Popular and Rock Music
0505-482	Beethoven
0505-483	Bach and the Baroque
0505-484	Romanticism in Music
0505-485	Music Theory II

Electives—*Music Performance (1 credit each):*

0505-401	RIT Singers
0505-402	RIT Orchestra
0505-403	RIT Concert Band
0505-404	RIT Jazz Ensembles
0505-405	RIT World Music Ensemble
0505-420	Applied Music

* A maximum of 4 credits of ensemble and/or applied study is applicable toward the minor.

Music Performance

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The music performance minor combines courses in music theory, history, and world music with practical application through ensemble participation and applied music study. This combination of the academic and practical strives to offer 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 20 quarter credit hours, selected from the following areas of study, is required for the minor.

Required Course:

0505-499	Music Theory I

Required Ensembles and Applied Music*— *Four credits must come from participation in one of these ensembles. Up to an additional four ensemble or applied music credits may be counted toward the minor:*

0505-401	RIT Singers
0505-402	RIT Orchestra
0505-403	RIT Concert Band
0505-404	RIT World Music Ensemble
0505-405	RIT Jazz Ensemble
0505-420	Applied Music

Music History Elective—*Choose at least one of the music history courses listed below. Up to an additional 8 credits of these courses may be counted toward the minor:*

0505-442	Music in the United States
0505-447	The American Musical Theater
0505-448	20th Century American Music
0505-450	Music and the Stage
0505-454	Orchestra Repertoire and History
0505-455	Survey of Jazz
0505-456	Topics in Music History
0505-459	Era of Haydn and Mozart
0505-463	Survey of African-American Music
0505-464	Blues as Personal and Social Commentary
0505-465	Special Topics: Mozart's Opera
0505-470	American Popular Song
0505-471	American Popular and Rock Music
0505-482	Beethoven
0505-483	Bach and the Baroque
0505-484	Romanticism in Music

Music Theory and World Music Electives—*Up to 8 credits may be counted toward the minor:*

0505-461	World Music I
0505-462	World Music II
0505-485	Music Theory II

* Each of the required ensemble classes is one credit hour only. Four quarters of participation are required to complete one upper-level course equivalent.

Networking and System Administration

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The minor in networking and system administration is structured for students in other computing or technology disciplines and features a sequence of courses that provides 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 operate, their administration, and the administration of the systems attached to them can be of value to every computing professional since their work will be impacted in some way by computer networks and computer systems.

Prerequisites—*Choose one of the following:*

4050-302	Scripting in Perl
4050-402	OS Scripting

Required Courses:

4050-351	Network Fundamentals
4050-421	System Administration I
4050-515	Introduction to Routing and Switching

Elective—*Choose one of the following:*

4050-413	Applications of Wireless Networks
4050-516	Network Services

Optical Sciences

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This minor provides students with the opportunity for additional study in optical sciences in order to build a secondary area of expertise in support of their major program. For example, the minor can be an important complement to studies in electrical and microelectronic engineering, the biological sciences, physics, chemistry, mathematics, technical photography, and various programs in the applied science and technology area. The department of physics and the Chester F. Carlson Center for Imaging Science jointly offer the minor.

Optical science techniques are used in a variety of consumer products (e.g., digital cameras, CD players), communication technologies (optical fibers), medical imaging (infrared imaging), and the sciences (surveillance, remote sensing, and astronomical systems). There are many opportunities in industry and government laboratories for people with recognized expertise in optical science. To obtain a minor in optical sciences students must complete three core courses and two elective courses.

Core Courses—*Students must complete one course in each of three fundamental areas of optical science:*

Optical Principles—*Choose one of the following:*

1051-303	Geometrical Optics
1017-455	Physical Optics
0305-525	Optics for Microelectronic Engineering
1017-320	Principles of Optics

Sources of Electromagnetic Radiation—*Choose one of the following:*

1017-556	Laser Physics
0609-511	Laser Technology
1051-370	Radiometry

Detectors—*Choose one of the following:*

1051-465	Detectors
1051-528	Design and Fabrication of a Solid State Camera

Electives—*Choose two of the following to provide specialization in any of the fundamental areas listed in the core*:*

1017-455	Physical Optics
1017-314	Modern Physics I (or 1051-313 Interactions Between Light and Matter, or 1014-442 Quantum Chemistry)
1051-528	Design and Fabrication of a Solid State Camera†
1017-412	Electricity and Magnetism II (or 0301-474 Electromagnetic Fields II)
1017-555	Optical Physics II
1017-511	Experimental Optics (or 1008-311 Analytical Chemistry: Instrumental Analysis)
0305-564	Microlithography Systems (and 0305-574 Microlithography Systems Lab)
0301-625	Modern Photonic Devices and Systems (or 0609-554 Electronic Optical Devices)
0301-674	Fiber Optics: Theory and Coupling (or 0614-520 Fiber Optic Telecommunications Technology)

* Substitution of courses for both the required and elective selections is possible with the approval of the optical science minor adviser. Students considering this minor are strongly advised to discuss their plan of study with the minor adviser.
† Design and Fabrication of a Solid State Camera (1051-528) may be used as an elective if it has not been previously used as a core course.

Packaging Science

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Students from outside the packaging science program, particularly those in engineering technology programs, multidisciplinary studies, management, marketing, international business, engineering programs, and School of Print Media programs could all benefit from the packaging science minor. It offers courses covering every aspect of packaging, including development/design, testing, marketing, and production. Related legal, economic, and environmental concerns are also addressed.

Required Courses:*

0607-502	Packaging Materials
0607-503	Packaging Container Systems
0607-504	Concept to Consumer

Electives—*Choose two of the following:†*

0607-431	Packaging Production Systems
0607-462	Packaging Regulations
0607-485	Principles of Shock and Vibration
0607-520	Packaging Management
0607-524	Packaging Economics
0607-530	Packaging and the Environment
0607-531	Packaging Process Control
0607-536	Medical Products Packaging
0607-555	Export Packaging
0607-568	Food Preservation and Packaging
0607-570	Point-of-Purchase Display

* These are courses developed for non-packaging majors and also are used as bridge courses for the packaging graduate program. A student who completes these courses may take the upper-level packaging electives within the packaging science program.
† These are upper-level elective courses in the packaging science program.

Philosophy

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The philosophy minor provides basic competency in a variety of areas of philosophical inquiry and in developing the critical skills central to philosophical analysis. Students should achieve an articulate understanding of many of the great philosophers, major philosophical issues, and methods of philosophical inquiry that shape our most fundamental forms of critical reflection upon human life and conduct. As a result, students will develop understanding and skills that directly enhance their future personal and professional lives. *This minor is closed to students enrolled in the philosophy program.*

Electives—*Choose five of the following:**

0509-440	Philosophy of Religion
0509-441	Logic
0509-442	Philosophy of Art/Aesthetics‡
0509-443	Philosophy of Science**
0509-444	The Great Thinkers†
0509-445	Social and Political Philosophy§
0509-446	Philosophy of Law
0509-447	Contemporary Moral Problems
0509-448	Philosophy of Peace
0509-449	Special Topics†
0509-450	Seminar in Philosophy*†
0509-451	Professional Ethics
0509-452	Philosophy of Technology
0509-453	Environmental Philosophy

0509-454	Feminist Theory‡
0509-455	Theories of Knowledge
0509-456	Ancient Philosophy
0509-457	Modern Philosophy
0509-458	Philosophy of Mind
0509-459	Philosophy of the Social Sciences††
0509-460	East Asian Philosophy
0509-461	American Philosophy
0509-462	Contemporary Philosophy
0509-464	Philosophy of Action
0509-465	Critical Theory‡
0509-466	Existentialism
0509-467	Medieval Philosophy
0509-468	Metaphysics‡
0509-469	19th Century Philosophy‡
0509-470	Philosophy and Literary Theory‡
0509-471	Philosophy of Film‡
0509-472	Minds and Machines
0509-473	Technology and Embodiment
0509-474	Philosophy of Language‡
0509-475	Philosophy of Vision/Imaging‡
0509-476	Ethical Theory

* Prerequisite: Two prior courses in philosophy or permission of the instructor. Students who have taken at least two courses are encouraged to take a Seminar in Philosophy (0509-450), usually offered more than once each year.
† Topics will vary.
‡ Prerequisite: One previous philosophy course or permission of the instructor is strongly encouraged.
§ Prerequisite: At least one prior course in philosophy, political science, or sociology
** Prerequisite: At least one prior course in either philosophy or one of the natural sciences (physics, chemistry, or biology)
†† Prerequisite: At least one prior course in either philosophy or one of the social sciences (psychology, economics, political science, sociology, or anthropology)

Physics

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Students have the opportunity for additional study in physics in order to build a secondary area of expertise in support of their program or other areas of interest.

Prerequisites:	
1017-311	University Physics I
1017-312	University Physics II
1017-313	University Physics III
Required Courses:	
1017-314	Modern Physics I
1017-318	Vibrations and Waves

Electives—*Choose three of the following (at least one must come from Group A and at least one from Group B):*

Group A	
1017-321	Introduction to Laboratory Techniques
1017-374, 378	Experiments in Modern Physics I, II*
1017-431	Electronic Measurements
Group B	
1017-315	Modern Physics II
1017-401	Intermediate Mechanics I
1017-411	Electricity and Magnetism I
1017-415	Thermal Physics
1017-455	Physical Optics
1017-440	Stellar Astrophysics
1017-480	Mathematical Methods in Physics I
1017-522	Quantum Mechanics I

Note: Other courses may be considered on an individual basis. See the minor adviser.
* Experiments in Modern Physics I, II (1017-374, 378) are each 2 quarter credit hours and count as one course combined.

Political Science

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The political science minor emphasizes the interdependence of domestic politics and international relations in the present 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.

Students select five courses from the following groups. Three courses may come from one group and two from another.

International Relations	
0507-442	Contemporary Middle East
0507-444	Strategy and Diplomacy: Europe
0507-488	Modern Germany
0513-425	Politics and the Life Sciences
0513-426	Cyberpolitics
0513-429	Primate Politics
0513-441	Politics in China
0513-443	Politics of Russia
0513-446	Politics in Developing Countries
0513-447	Human Rights/Global Perspective
0513-449	Special Topics in Political Science
0513-453	American Foreign Policy
0513-461	Comparative Politics
0513-484	Government and Politics of Africa
0513-486	Comparative Politics in Latin America
0513-487	International Law and Organizations
0513-488	War and the State
0513-489	Terrorism and Political Violence
0513-490	International Political Economy
0513-491	Politics of the Middle East
0513-492	Religion and International Politics
0513-493	Global Politics and the Environment
0513-494	Comparative Public Policy
0513-496	Government and Politics in East Asia
American Politics	
0508-484	Environmental Policy
0513-449	Special Topics in Political Science
0513-450	State and Local Politics
0513-451	The Congress
0513-452	The American Presidency
0513-453	American Foreign Policy
0513-454	Political Parties and Voting
0513-455	Politics and Public Policy
0513-456	Judicial Process
0513-457	Constitutional Law
0513-458	American Political Thought
0513-460	Constitutional Rights and Liberties
0513-462	Abraham Lincoln and American Democracy
0513-463	First Amendment, Liberty, and Deliberative Democracy
0513-465	Modern Constitutionalism, Liberty, and Equality
0513-466	Political Leadership
0513-481	Women in Politics
0513-485	Politics Through Fiction
0513-514	Political Theory

Print Media

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The print media minor introduces publishing to undergraduate students outside of the School of Print Media. Students may specialize in advertising and media strategy, contemporary publishing, digital imaging and pre-media, or print production. They also may elect to take courses across these areas. Students from the creative disciplines can learn about designing and distributing content in the world of integrated communications, which includes electronic as well as print formats. Business students may opt for learning about the role of advertising in the publishing media, or students from the sciences may choose to gain insight into the processes and materials of print production. Please note: Undergraduate students already enrolled in the School of Print Media are not eligible to take this minor.

Required Course:	
2082-371	Principles of Printing

Electives—*Students may choose courses from the following groupings. They may select one area of specialization, or they may choose from all areas to customize the minor. A minimum of 20 credits must be completed, including Principles of Printing. Students should check prerequisites for each course listed in the online Course Description catalog.*

Advertising and Media Strategy	
2082-367	Media Industry Analysis
2083-201	New Media Perspectives
2083-323	Multimedia Strategies
2082-313	Media Distribution and Transmission
2083-402	Media Law
2083-416	Media Business Basics
Contemporary Publishing	
2083-216	Digital Foundations
2083-217	Typography and Page Design
2082-337	Digital Asset Management
2083-412	Digital News Systems Management
2082-313	Media Distribution and Transmission
2083-402	Media Law
2083-317	News Production Management
Content Management	
2083-216	Digital Foundations
2082-337	Digital Asset Management
2082-417	Database Publishing
2083-402	Media Law
Digital Imaging and Pre-media	
2081-454	Print Finishing Management
2083-216	Digital Foundations
2083-217	Typography and Page Design
2083-206	Imaging for New Media
2082-407	Color Management Systems
2081-409	Image Processing Workflow
2082-337	Digital Asset Management
2083-402	Media Law
Print Production	
2082-401	Digital Print Process
2081-367	Lithographic Process
2081-364	Flexographic Process
2081-386	Gravure Process
2081-454	Print Finishing Management
2081-458	Ink Chemistry and Formulation
2082-387	Substrates for Printing
2082-407	Color Management Systems
2082-413	Operations Management for Graphic Media

Psychology

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This minor provides a solid knowledge base of psychological terms, concepts, methods, theories, and issues.

Prerequisite:	
0514-210	Introduction to Psychology
Required Course:	
0514-402	Research Methods
Electives—*Choose four of the following:*	
0514-440	Childhood and Adolescence
0514-441	Humanistic Psychology
0514-442	Adulthood and Aging
0514-443	Cognitive Psychology
0514-444	Social Psychology
0514-445	Psychology of Perception
0514-446	Psychology of Personality
0514-447	Abnormal Psychology
0514-448	Industrial/Organizational Psychology
0514-449	Behavior Modification
0514-451	Psychology of Motivation
0514-453	Death and Dying
0514-483	Social Psychology of Religion
0514-544	History and Systems

Public Policy

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The purpose of this minor is to provide students with a foundation in the field of public policy and allow them to make connections between public policy and other fields of study. Students are allowed to select one of two tracks within the minor. The first track, policy issues, develops a broad perspective on public policy and its relationship to other fields. The second track, policy analysis, highlights the analytical tools used by the policy analyst to evaluate and understand policy formulation and impacts. Both tracks explore contemporary public policy issues, especially those connected to the science and technology fields. This minor underscores the role of public policy on science and technology-based problems. Through the minor, students obtain a deeper understanding of what public policy is and how it is integrated within a number of specific contexts.

Prerequisites: *Check individual course descriptions for specific prerequisites.*	
Policy Issues Track	
Required Courses:	
0521-400	Foundations of Public Policy
Plus one of the following:	
0521-460	Capstone: Public Policy Minor*
0508-530	Seminar in Science, Technology, and the Environment*
Electives—*Choose three of the following:*	
0508-441	Science and Technology Policy
0508-484	Environmental Policy
0508-540	Science and Technology Policy Seminar‡
0513-455	Politics and Public Policy*
0515-413	Urban Planning and Policy
0515-451	Technology Transfer and Globalization*

0521-401	Values and Public Policy*	
0521-406	Introduction to Qualitative Analysis*	
0521-408	Technological Innovation and Public Policy*	
0521-410	Information and Communication Policy*	
0521-449	Special Topics in Public Policy†	
0521-451	Energy Policy	

Policy Analysis Track

Required Courses:

0521-400	Foundations of Public Policy
0521-402	Policy Analysis I*
0521-403	Policy Analysis II*
0521-404	Policy Analysis III*

Electives—*Choose one of the following courses:*

0508-441	Science and Technology Policy
0508-484	Environmental Policy
0508-540	Science and Technology Policy Seminar‡
0515-413	Urban Planning and Policy
0521-401	Values and Public Policy
0521-406	Introduction to Qualitative Analysis*
0521-408	Technological Innovation and Public Policy*
0521-410	Information and Communication Policy*
0521-449	Special Topics in Public Policy†
0521-451	Energy Policy

* Students should check the prerequisites or co-requisites for these courses.
† Topics may vary.
‡ Prerequisite: Science and Technology Policy (0508-441), Environmental Policy (0508-484), or Foundations of Public Policy (0521-400).

Science Writing

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The science writing minor gives students a basic grounding in the practice and theory of writing about science for a popular audience. In the three required courses, students gain practice in writing about science for lay readers as well as for scientists interested in the wider social ramifications of science. They also examine the rhetorical elements of a wide range of science writings. Students can then choose from a group of courses that deal with the history, ethics, cultural debates, and literary representation of science and technology. The minor complements a number of degree programs in the colleges of Science, Engineering, and Applied Science and Technology, as well as a number of other programs across the university.

Prerequisite:

0502-227	Writing Seminar (or equivalent)

Required Courses:

0502-456	Rhetoric of Science
0502-460	Science Writing
0502-462	Advanced Science Writing

Electives—*Choose two of the following:*

0502-449	Worlds of Writing
0502-459	Creative Nonfiction
0502-560	Special Topics: Language and Brain
0502-560	Special Topics: Introduction to Writing Science and Technology
0504-448	Biographical Literature: Lives of Scientists
0504-462	Literature and Technology
0504-482	Science Fiction

Science, Technology, and Public Policy

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This minor provides both breadth and depth in the field of science and technology policy by allowing students to make connections between public policy and other scientific and technical fields. Students will explore contemporary science and technology policy issues and will build a foundation for understanding the policy process. Through the minor, students obtain a deeper understanding of what science and technology policy is and how it is integrated within a number of specific contexts. This minor is closed to students enrolled in the public policy degree program or already taking a minor in science, technology, and environmental studies or public policy.

Required Course—*Choose one of the following:*

0508-540	Science and Technology Policy Seminar
0508-530	Seminar in Science, Technology, and the Environment†

Plus, at least one of the following 400-level courses:

0508-441	Science and Technology Policy
0521-400	Foundations of Public Policy

Electives—*Choose three of the following:**

0508-444	Social Consequences of Technology
0508-445	Biomedical Issues: Science and Technology
0508-447	Special Topics in Science and Technology Studies
0508-482	Energy and the Environment
0508-484	Environmental Policy
0508-487	Special Topics in Environmental Studies
0521-408	Technological Innovation and Public Policy†
0521-410	Information and Communication Policy†
0521-449	Special Topics in Public Policy
0521-451	Energy Policy

* If only one of the required 400-level courses is taken, select three electives from the following list; if two of the required 400-level courses are taken, select two electives from the electives list.
† Students should check the prerequisites for these courses.

Science, Technology, and Society

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This minor integrates the studies of human society and 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 will learn how to analyze the social institutions, the built environment, and their role in creating them. This minor will enhance a student's ability to contribute to the development of science and technology in ways that are historically, culturally, and ethically informed.

Required Course:

0508-530	Seminar in Science, Technology, and the Environment*

Electives—*Choose four of the following:*

0504-462	Literature and Technology*
0508-440	History of Science
0508-441	Science and Technology Policy
0508-442	History of American Technology
0508-443	Face of the Land
0508-444	Social Consequences of Technology
0508-445	Biomedical Issues: Science and Technology
0508-447	Special Topics: Science and Technology

0508-451	Cyborg Theory: (Re)Thinking the Human Experience in the 21st Century
0508-452	Gender, Science, and Technology
0508-460	Environment and Society
0508-483	Environmental Values
0508-490	Biodiversity and Society
0508-500	Science, Technology, and Society Classics
0515-451	Transfer Technology and Globalization*

* Students should check the prerequisites for these courses.

Service Management

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Delivering exceptional customer service experience is an important strategic component of all business enterprises in the U.S. and global economies. Managing customer services includes knowing your customers and their preferences (customer relations management databases); identifying quality service standards; using technologies to deliver timely, customized service experiences; monitoring service quality; identifying gaps in service; and leading employees to meet and exceed customer expectations. A minor in service management will give students a solid background in these principles.

Required Courses:	
0619-322	Service Management in a Global Economy
0619-320	Global Standards in the Service Industry
0619-410	Assessing Service Quality
0619-426	Technology in Service Systems
0619-470	Leadership in Service Cultures

Sociology and Anthropology

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The minor in sociology and anthropology examines the changing interrelations among work, technology, and culture in different nations across the globe. With the globalization of the workforce, trade, and production, social interactions have become increasingly marked by differences in gender, class, racial, and ethnic identities. Courses analyze the global and local worlds of work, how social relations are shaped by technology and culture, and how global trends are transforming our lives.

Prerequisite—*Choose one of the following:*	
0510-210	Cultural Anthropology
0515-210	Foundations of Sociology
Electives—*Choose five of the following:*	
0510-440	Cultures in Globalization
0510-442	Culture and Politics in Latin America
0510-443	Immigration to the U.S.
0510-444	Global Economy and the Grassroots
0510-445	Global Cities
0510-446	Native North Americans
0510-447	Anthropology of Mass Media
0510-448	Native Americans in Film
0510-449	Sustainable Development
0510-450	Cultural Resource Management and Historic Preservation

0510-451	Global Sexualities
0510-452	Bodies and Culture
0510-454	Visual Anthropology
0510-457	Divided Europe
0510-459	Cultural Images of War and Terror
0510-460	Genocide and Post-Conflict Justice
0510-461	Native American Repatriation
0510-486	Globalizing Africa
0510-487	African Popular Cultures
0510-502	Archaeology and the Human Past
0510-506	Great Discoveries in Archaeology
0510-507	Archaeological Science
0510-508	The Archaeology of Cities
0515-441	The Changing Family
0515-442	The Urban Experience
0515-443	Sociology of Work
0515-444	Social Change
0515-446	Sociology of Health
0515-447	Women, Work, and Culture
0515-449	Population and Society
0515-451	Transfer of Technology and Globalization
0515-453	Global Exiles of War and Terror
0515-485	Diversity in the City
0515-506	Social Inequality

Software Engineering

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The software engineering minor provides students with an opportunity to gain a deeper understanding of software engineering in the context of their respective fields of study. Depending on their choice of courses, students enhance their academic experience by gaining a deeper understanding of processes with which professionals build software today as well as current techniques for designing and building professional quality software.

Prerequisites—*Choose one of the following:*	
4003-243	Object-Oriented Programming
4003-263	Computer Science for Transfers
Required Courses:	
4010-361	Software Engineering
4010-362	Engineering of Software Subsystems
4010-456	Software Engineering Process

Elective Courses—*Students take two additional 4-credit elective courses from the list of undergraduate software engineering offerings. At least 12 of the credits taken toward this minor must not be required by the student's home program.*

Statistics

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The statistics minor provides an opportunity for students to deepen their technical background and gain further appreciation for modern mathematical sciences and the use of statistics as an analytical tool.

Prerequisites:	
1016-281	Project-Based Calculus I
1016-282	Project-Based Calculus II
1016-283	Project-Based Calculus III (or equivalent)

Required Courses:

To receive a minor in statistics, students must complete five courses from the list below and maintain a minimum GPA of 2.0. At least three of these courses must not be required by the student's home program. All required courses must be taken in the School of Mathematical Sciences. Students may elect to take either 1016-352 or 1016-314 as part of the minor, but not both. Students may elect to take either 1016-345 or 1016-351 as part of the minor, but not both.

1016-314	Engineering Statistics I
1016-345	Probability and Statistics for Engineers
1016-351	Probability
1016-352	Applied Statistics
1016-354	Introduction to Regression Analysis
1016-355	Design of Experiments
1016-358	Statistical Quality Control
1016-415	Statistical Analysis for Bioinformatics
1016-451	Mathematical Statistics I
1016-452	Mathematical Statistics II
1016-454	Non-parametric Statistics
1016-457	Research Sampling Techniques
1016-5xx	Choices through advising

Structural Design

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The minor focuses on structural design and the analysis of steel, concrete, and wood. The minor also explores building codes as they relate to design.

Students from outside the civil engineering technology program with majors in mechanical engineering technology or mechanical engineering would benefit from the minor. The minor is not limited to students in these fields of study, but there are some technical prerequisite courses.

Prerequisites:	
0610-302	Introduction to Statics
0610-303	Strength of Materials
Required Courses:	
0608-404	Applied Mechanics of Materials
0608-490	Structural Analysis
0608-304	Structural Loads and Systems
Electives—*Choose three of the following:*	
0608-470	Timber Design
0608-497	Structural Steel Design
0608-305	Structural Computer Applications
0608-496	Reinforced Concrete Design

Sustainable Product Development

Andres Carrano, Minor Adviser
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Brian Thorn, Minor Adviser
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This multidisciplinary minor is aimed at students interested in exploring issues associated with developing and delivering sustainable product systems. Courses in the minor enhance the understanding of the three dimensions of sustainability (economic, ethical, environmental), develop awareness of the need for more sustainable approaches to product development, and explore strategies for developing and delivering sustainable product systems.

Prerequisite:	
1016-226	Math at the level of 1016-226 or higher
Required Courses:	
0303-520, 620	Engineering Economy
0617-436	Engineering Economics (or equivalent)
0303-691, 790	Fundamentals of Sustainable Product Design
0303-791	Introduction to Life Cycle Assessment and Costing

Electives—*Choose two of the following (one must be a social context course):*

Social Context Electives	
0508-211	Science, Technology, and Values
0508-212	Introduction to Environmental Studies
0508-441	Science and Technology Policy
0508-443	Face of the Land
0508-444	Social Consequences of Technology
0508-460	Environment and Society
0508-463	Great Lakes I
0508-464	Great Lakes II
0508-482	Energy and the Environment
0508-483	Environmental Values
0508-484	Environmental Policy
0508-490	Biodiversity and Society
0521-408	Technology Innovation and Public Policy
0521-451	Energy Policy
Technical and Engineering Electives	
0303-792	Design for the Environment
0304-460	Contemporary Issues in Energy and the Environment
0304-710	Fuel Cell Technology
Civil Engineering Technology and Environmental Management Electives	
0630-465	Product Stewardship
0630-521	Environment, Health, and Safety for Engineering Technology
0630-350	Survey of Solid and Hazardous Waste Management
0630-352	Survey of Industrial Wastewater Management
0630-354	Survey of Air Emissions Management

Telecommunications

Warren Koontz, Minor Adviser
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A telecommunications minor is available for undergraduate students who have the appropriate math experience. This minor consists of three required courses and two technical electives for a total of 20 quarter credit hours.

Required Courses:	
0614-271	Telecommunications Fundamentals
0614-465, 466	Voice Communications Technology Lab
or	
0614-464	Voice Communications Systems
0614-477	Networking Technologies
Electives—*Choose two of the following:*	
0614-475	Switching Technologies
0614-480	Telecommunications Policy
0614-483	Telecommunications Transmission Systems
0614-561	Network Engineering
0614-562	Network Engineering Lab
0614-574	Network Planning and Design
0614-520	Fiber Optic Telecommunications Technology

Note: Students who have prior knowledge/experience but who may not have completed the required prerequisites may take a specific course with the approval of the instructor.

Theater Arts

Peter Ferran, Minor Adviser
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The theater arts minor offers students a focused study of the theatrical and dramatic arts, combining courses in dramatic and theatrical history, criticism, and theory with concrete practice through direct production involvement. Students will consult with the fine arts faculty to select courses for the theater arts minor. NOTE: No course taken to satisfy the requirements of this minor may be counted toward any other minor, nor may any course taken to satisfy the requirements of another minor be counted toward the theater arts minor.

Required Course:	
0505-489	Theater Production Seminar and Workshop
Theater and the Times	
Electives— *Choose no fewer than two, no more than four, of the following courses:*	
0505-450	Music and the Stage
0505-453	Theater in the United States
0505-457	Contemporary Drama, Theater, and Media
0505-458	Modern European Theater and Drama
0505-486	German Theater and Drama
0505-502	Shakespeare the Dramatist
Choose no more than two of the following courses:	
0504-440	Drama and Theater
0505-446	American Film of the Studio Era
0505-447	American Musical Theater
0505-467	American Film Since the Sixties
0505-488	Special Topics: Drama and Theater-Related

Urban Studies

Christine Kray, Minor Adviser
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This minor focuses on the interplay between urban issues and urban policy. Every metropolitan area must address such perennial issues as housing, transportation, education, crime, safety, recreation, and economic development. Each community must do so with an understanding of its unique social mix and neighborhood relations, and with recognition of its place in wider regional, national, and global networks. Students identify and analyze central issues and social problems of urbanization and explore and assess various ways decision-makers respond to these issues.

Prerequisite—*Choose one of the following:*	
0515-210	Foundations of Sociology
0510-210	Cultural Anthropology
Required course:	
0515-442	The Urban Experience
Electives—*Choose four of the following (at least one course must be from urban policy and one from urban issues.)*	
Urban Policy	
0508-491	Sustainable Communities I
0511-440	Urban Economics
0515-413	Urban Planning and Policy
0526-441	GIS Applications in UC Studies
0526-443	Community Economic Development: Rochester
Urban Issues	
0510-443	Immigration to the U.S.
0510-445	Global Cities

0515-485	Diversity in the City
0501-405	Major Issues: Crime/Justice in the Community*

* Major Issues: Crime/Justice in the Community (0501-405) offers a number of sections. Students in this minor may enroll only in section 02 (Crime/Justice in the Community).

Water Resources

Scott Wolcott, Minor Adviser
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The water resources minor broadens the learning experiences and professional opportunities of students in technical disciplines who have an interest in engineering technology. Students choose from a variety of courses to expand their knowledge of water treatment, wastewater treatment, hydrology, and the environment.

Prerequisites:	
0610-302	Introduction to Statics
	College-level chemistry
Required Course:	
0608-420, 421	Hydraulics and Lab
Electives—*choose four additional courses, including one from each of the two groups:*	
0508-484	Environmental Policy
Hydrology and Hydraulics Group	
0608-480	Groundwater Hydraulics
0608-482	Stormwater Management
0608-485	Hydraulic Structures
Water and Wastewater Group	
0608-432	Water and Wastewater Transportation
0608-438	Principles of Water and Wastewater Treatment
0608-510	Design of Water Treatment Facilities
0608-520	Design of Wastewater Treatment Facilities

Web Design and Development

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The minor in Web design and development is for non-computing majors and students outside the computing field who wish to learn more than just the basics of Web usage. The minor features courses in Web media and communication technologies. Students will learn how to design and build Web pages and create and manipulate digital images and video for Web use.

Required Courses:	
4002-206	Web Foundations
4002-306	Digital Image Creation
4080-310	Digital Video for the Web
4002-406	Rapid Online Presence
4002-535	Network-Based Multimedia

Web Development

Daniel Bogaard, Minor Adviser
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This minor provides students with a firm foundation in Web development. The Web has become a global, essential, and ubiquitous information delivery medium. The minor explores Web development, starting with simple sites and moving through dynamic client-side and server-side creation. Students will create their own Web 2.0, AJAX-driven compound document application.

Prerequisites:

Students should have completed course work in multimedia, discrete mathematics, and a two-course programming sequence prior to beginning course work for this minor.

Required Courses:

4002-360	Introduction to Database and Data Modeling
4002-409	Website Design and Implementation
4002-536	Web Client-Side Programming
4002-539	Web Server-Side Programming
4002-546	Web Client-Server Programming

Women and Gender Studies

Tina Lent, Minor Adviser
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The women and gender studies minor provides a critical framework to explore the significance of gender (along with race, sexuality, and class) in the construction of knowledge within academic disciplines and in the shaping of women's and men's lives. Courses engage a critical pedagogy focused on the recovery of women's contributions in a variety of fields, on women's and men's roles in society across cultures, and especially on critical questions about gender neutrality in the shaping of culture.

Required Course:

0522-400	Foundations of Women and Gender Studies

Electives—*Choose four of the following:*

0505-491	Traumatic Images
0505-516	Queer Looks
0505-480	Women/Gender/Art
0522-401	American Women: Colonial Era to 1848
0522-402	American Women: 1848 to Now
0522-405	Women and Science
0522-406	Feminist Theory
0522-407	Seminar on Sexual Violence
0522-410	Introduction to Gay, Lesbian, Bisexual, and Transgender Studies
0522-415	Domestic Violence
0522-436	Women's Stories, Women's Films
0522-439	Queer Looks I
0522-446	Women and Crime
0522-447	Women, Work, and Culture
0522-449	History of Women in Science and Engineering
0522-450	Gender, Science, and Technology
0522-451	Global Sexualities
0522-452	Bodies and Culture
0522-453	Economic Role of Women
0522-454	Hispanic Women in the World
0522-459	Toni Morrison
0522-460	Special Topics*
0522-480	Women/Gender/Art
0522-481	Women's Studies in Language and Literature
0522-482	Women in Politics
0522-483	Psychology of Gender
0522-484	Auto/Biography
0522-492	Native American Women's Experience
0525-543	Women in the Hispanic World: Politics of Identity Formation

Electives—*Students may choose three of the above and one of the following:*

0504-455	Shakespeare: Comedies and Histories
0504-467	Black Writers Today
0505-446	American Film in the Studio Era

* Special Topics (0522-460) may include the following: Traumatic Images, Queer Looks II, Art of Dying, Contemporary Women's History, Prostitution and Vice, and Queering Gender.

Writing Studies

Dianna Winslow, Minor Adviser
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The writing studies minor offers students the opportunity to develop and practice writing skills in a variety of contexts; the competencies needed to be effective, confident, and versatile when facing writing challenges in the workplace; and an understanding of the theoretical and historical foundations underlying written communication and linguistics. The minor accommodates students with a wide variety of writing interests, disciplinary majors, and professional goals.

Prerequisite:

0502-227	Writing (or equivalent)

Electives—*Students must choose five different courses.*

Choose one course from the following:

0502-443	Written Argument
0502-456	Rhetoric of Science

Choose one course from the following:

0502-445	The Evolving English Language
0502-457	Language, Dialects, and Identity

Choose three courses from the following:

0502-443	Written Argument
0502-444	Technical Writing
0502-445	The Evolving English Language
0502-449	Worlds of Writing
0502-455	Writing the Self and Others
0502-456	Rhetoric of Science
0502-457	Language, Dialects, and Identity
0502-459	Creative Nonfiction
0502-460	Science Writing
0502-560	Special Topics: Writing

Academic Enrichment

Accelerated dual degree options

RIT offers the following dual degree programs in which a student can earn a BS degree and an MS or ME degree in less time that it takes to do each program separately.

College of Applied Science and Technology

BS in Computer Engineering Technology/MS in Computer Science
BS/MS in Electrical Mechanical Systems Integration
BS in Environmental Technology/MS in Environmental Health and Safety Management
BS/MS in Manufacturing Systems Integration
BS/MS in Mechanical Systems Integration
BS in Safety Technology/MS in Environmental Health and Safety Management
BS/MS in Telecommunications Engineering Technology

B. Thomas Golisano College of Computing and Information Sciences

BS in Medical Informatics/MS in Computer Science

Kate Gleason College of Engineering

BS/MS in Applied and Mathematical Statistics
BS/MS in Applied Statistics
BS/MS in Computer Engineering
BS/MS in Electrical Engineering
BS in Electrical Engineering/MS in Computer Science
BS in Electrical Engineering/MS in Materials Science and Engineering
BS/ME in Industrial Engineering
BS/MS in Industrial Engineering
BS in Industrial Engineering/MS in Applied and Mathematical Statistics
BS in Industrial Engineering/ME in Engineering Management
BS in Industrial Engineering/ME in Systems Engineering
BS/ME in Mechanical Engineering
BS/MS in Mechanical Engineering
BS in Mechanical Engineering/MS in Public Policy
BS in Microelectronic Engineering/MS in Material Science

College of Health Sciences and Technology

BS/MS in Physician Assistant

College of Imaging Arts and Sciences

BS in Print Media/MBA

College of Liberal Arts

BS in Public Policy/MS in Science, Technology, and Public Policy

College of Science

BS/MS in Applied Mathematics
BS in Applied Statistics/MS in Applied Mathematics
BS in Biochemistry/MS in Chemistry
BS/MS in Bioinformatics
BS/MS in Chemistry
BS in Chemistry/MS in Materials Science and Engineering
BS in Computational Mathematics/MS in Applied Mathematics
BS in Computational Mathematics/MS in Computer Science
BS/MS in Environmental Science
BS in Physics/MS in Materials Science and Engineering
BS in Polymer Chemistry/MS in Chemistry

Cooperative Education and Career Services

www.rit.edu/emcs/oce/(585) 475-2301

The Office of Cooperative Education and Career Services offers a wide range of programs and services to support the career development and employment needs of all RIT students. The office offers one-on-one advising as well as job search seminars and presentations. It also provides online access to employment opportunities. Working relationships with thousands of employing organizations can help graduate students develop their individual job search plans. Graduate students are encouraged to meet with their assigned program coordinator in the Office of Cooperative Education and Career Services early to begin their career planning. Information is available through the office website at www.rit.edu/co-op/careers, or by visiting the office on the first floor of the Bausch & Lomb Center. Individual appointments may be made by calling (585) 475-2301.

Double majors

RIT encourages students to enhance their degree programs by enrolling in a double major. A double major is any combination of majors from RIT's more than 200 academic programs. Students can combine any number of programs to create a double major that best meets their academic and professional goals. Some guidelines apply to the creation of a double major:
• Double majors are available only to matriculated baccalaureate students.

- Both degree programs must be of the same type (i.e., both BS degrees or both BFA degrees).
- Both majors in a double major degree must be in existing approved degree programs.
- Students must meet the entrance criteria for both programs.
- A double major degree requires the approval of the heads of both degree programs, who will take into consideration issues such as potential scheduling conflicts.
- A double major degree must satisfy the graduation and accreditation requirements for both degree programs.
- The double major will be the same type as the two component majors. It is possible to use a single requirement to meet the needs of both majors; double counting is allowed as long as the department heads of both degree programs approve it.
- In cases where the two majors do not have 28 unique and non-overlapping credit hours, students must take enough additional course credits in either or both majors to meet the 28-credit minimum.
- Curriculum requirements for the double major will be developed by the appropriate personnel of the two degree programs and approved by the department heads of both degree programs.
- Department heads approving the double major are responsible for forwarding the *Undergraduate Double Major Authorization Form* to the vice president for Academic Affairs, who will validate that all criteria for the double majors have been met.

Experiential learning

www.rit.edu/co-op/careers
(585) 475-2301 (voice), (585) 475-6905 (TTY)

At RIT, students earn an outstanding education. But to prepare them for the challenges they will face on the job, RIT offers experiential education that helps make course work and projects more relevant to industry.

Experiential education may include:
- joining a team solving business problems through industry-sponsored, class-based projects.
- working with a faculty member on an externally funded research project.
- study or work abroad.
- gaining valuable work experience through internships and co-operative education—paid work assignments with corporations and organizations around the U.S. and abroad.

Fellowships

http://fellowships.rit.edu
(585) 475-4466

All students and alumni with excellent academic records can apply for a competitive fellowship or scholarship. These outside awards fund undergraduate and graduate study in the U.S. or abroad. Some of the prestigious fellowships that students and alumni can apply for include the Fulbright Fellowship, the NSEP Boren Fellowship, Freeman Asia, Rhodes, Gilman, and many more. The Fellowships office assists in identifying the best program for each individual applicant and provides guidance throughout the application and selection processes.

Honors program

http://honors.rit.edu
(585) 475-511

The RIT Honors Program provides a supportive and encouraging environment for students with intellectual curiosity and academic distinction. Students benefit by working closely with faculty, and by sharing academic experiences with other honors students, both in and out of the classroom.

The Honors Program centers on three basic ideals of leadership, scholarship, and citizenship, and is designed for students who:
- seek to challenge themselves in exemplary learning experiences such as undergraduate research projects, honors seminars, and study abroad;
- wish to extend and share their knowledge through participation in professional associations and conferences; and
- aspire to join other outstanding students and faculty in a wide range of special activities throughout the year, including field trips, social events, and community service projects.

Honors activities and courses are designed to enhance the professional dimension of the student's collegiate experience. Major components of the Honors Program include professional opportunities within the student's home college, enhanced general education courses, and complementary learning experiences. Special features include:
- An Honors curriculum: Special courses, seminars, projects, and advising are offered in the student's home college and in general education honors courses within the College of Liberal Arts and the College of Science.
- Research and experiential learning: The Honors Program provides opportunities to work with faculty on applied and interdisciplinary research projects.
- Honors advising: Each college has designated an experienced faculty or staff member to serve as its Honors advocate. The advocate will work with students one-on-one, advising them as they develop plans for professional and experiential learning opportunities such as research placements, co-ops, internships, and study abroad.
- Study abroad: Honors students are encouraged to pursue study abroad to add an international perspective to their education. Honors students work with the director of the Study Abroad program for guidance on how to include such experiences in their academic career.
- Honors residence: Students may choose to live in honors housing in the residence halls. This option increases interaction with other honors students outside the classroom.

Requirements: Students in the Honors Program are required to enroll in honors courses and to fulfill approximately half of their liberal arts requirements with honors courses. Students are expected to participate in co-curricular activities within their college. Honors students are also required to complete complementary learning experiences each year. All students who wish to continue in the program are reviewed annually by the Honors Committee. Program continuation is subject to maintaining grade-point average and other requirements.

Admission: Applicants who submit RIT's Application for Undergraduate Admission (or the Common Application) by February 1 may be invited to the Honors Program if their high school grades, rank, and test scores place them among the top 5 percent of the

applicants to the university. This typically requires outstanding grades and SAT or ACT scores, and a class rank of 95 percent or higher. Late entry into the Honors Program is also possible after a student's second or fifth quarter at RIT.

Scholarship availability: All students enrolled in the RIT Honors Program receive significant academic (merit) scholarships from RIT.

Independent study

An independent study project is a program of study, research work, or creative work executed under a specific set of rules without classroom-type assistance from an instructor, but under the guidance and direction of an instructor, which would earn for the student a predetermined number of credits. Students have a limited opportunity to obtain credit for independent study and to use that credit to meet degree requirements. Generally, independent study projects represent work that is different from, or an extension of, existing course offerings. The rules governing independent study projects can be found in section D3.O of the RIT Policies and Procedures Manual.

Online learning

http://rit.edu/online
(585) 475-2229 (V/TTY)
RIT offers numerous degree and certificate programs in an online format, most of which can be earned without ever coming to campus. Including graduate and undergraduate courses, RIT offers hundreds of courses online annually. Each year, nearly 5,000 students enroll in an online learning course. Students are encouraged to select and apply to their chosen academic program, but in some cases may enroll in courses prior to matriculation into a program.

Online learning offers students the flexibility to learn on their own time, when and where it best meets their needs. All online courses are taught using Internet and Web-based technologies. Students must have Internet access, a computer, DVD player and monitor, and a telephone to participate in courses. Not all courses use the same technologies. Some take advantage of toll-free phone conferences or Web conferences, while others use text-based chat or CD-ROMs. Some have Web-based simulations and some require additional software to complete course requirements. All courses use asynchronous Internet/Web-based tools for the fundamental class structure.

Online students have full access to customer and technical support through a toll-free phone number and e-mail. Online learners also have full access to the library and library services. Other online services include registration, orientation, access to student records and course material ordering. Registration also can be accomplished through touchtone phone and fax. Annual offerings can be found at http://infocenter.rit.edu. Officially registered students receive an e-mail about three weeks before the quarter begins welcoming them to online learning at RIT and directing them to RIT's course management system, myCourses. From there, they can access the Online Learning Student Community to read and complete the Quarterly Startup. As part of the Quarterly Startup self-guided tutorial, students may review course information, order course materials online for mail delivery, and review any proctored examination requirements.

All courses offered online meet the same rigorous objectives set for traditional classroom experiences. Faculty members who teach online courses often teach the same class in a traditional format.

However, just as each professor establishes the learning outcomes for a traditional course, his or her individual choices will be present in the online classroom. Most classes establish either a weekly schedule for learning activities or a project-based learning approach, where deliverables are due after certain learning outcomes are accomplished. These may include team-based projects, required asynchronous discussion, or computer programs. Most classes also include various readings either from textbooks or electronic reserves. Students interact online with other students to exchange ideas and collaborate much as they would face-to-face.

Online learning serves students throughout the United States and in nearly 40 countries. Students living near the RIT campus in Rochester, N.Y., may choose to take both online and traditional courses as a way of increasing flexibility and remaining on target to complete a degree.

Rochester Area College course work agreement

RIT is a member of the Rochester Area College (RAC) consortium. These colleges have instituted a cooperative program that provides undergraduate students the opportunity to register at a member college without additional tuition charges.

The following Rochester area institutions of higher education are consortium members:
- Alfred University
- Colgate Rochester Crozer Divinity School
- Empire State College
- Finger Lakes Community College
- Genesee Community College
- Hobart & William Smith Colleges
- Keuka College
- Monroe Community College
- Nazareth College of Rochester
- Roberts Wesleyan College
- Rochester Institute of Technology
- St. Bernard's Institute
- St. John Fisher College
- State University College at Alfred
- State University College at Brockport
- State University College at Geneseo
- University of Rochester

Students must meet the following criteria in order to enroll as an intercollegiate student:

1. The requested course is not available at the home school.

2. The student is a full-time (12 credit hours or more) matriculated undergraduate student at his or her home school throughout the duration of the requested course.

3. The course is applicable to the student's undergraduate degree program.

4. Registration for the course is on a space-available basis.

5. If the requested course causes the student to assume a course overload, the additional charges will be based on the current rates of the home school during the semester or quarter in which the registration takes place.

6. Students enrolled at area colleges may register for two courses at RIT.

7. The program is not available in the summer.

Additional criteria are outlined on the intercollegiate registration form available at the Registrar's Office.

Study abroad

http://studyabroad.rit.edu
(585) 475-4466

To prepare students for success in our global society, RIT offers a range of study abroad opportunities. Living and studying in a foreign country goes beyond the traditional classroom setting and can provide an invaluable experience when it comes to immersing oneself in a foreign culture, experiencing a different educational environment, and gaining interpersonal and foreign language skills that could be of interest to future employers.

RIT has three global campuses located in Dubai, Croatia, and Kosovo in which students can study abroad for a quarter. Programs led by RIT faculty are in most cases are offered in the summer, although a few are offered during the quarter. Many programs—including programs in Marburg, Germany; Genoa, Italy; and a program at RIT's campus in Dubrovnik, Croatia—offer courses with credits that can be applied toward a student's liberal arts requirements. Other RIT-sponsored programs are offered in bio-medical science and health care in Dubrovnik, Croatia; design in Dessau, Germany; photography in Dubrovnik, Croatia; and film in Paris, France, to name a few.

Through affiliation agreements with other institutions, such as Arcadia University, Syracuse University, and the Siena School for Liberal Arts in Italy (including programs for deaf/hard of hearing students and interpreting majors), RIT also provides students with the opportunity to enroll in study abroad programs in many locations around the world while receiving RIT credit and financial aid. A wide selection of program choices and geographical locations allows students from every academic discipline to meet their study abroad needs and goals, ranging from intensive foreign language/cultural immersion programs to taking classes in their major.

Program locations include, but are not limited to, the United Kingdom, Ireland, Italy, France, Denmark, Germany, Spain, Hungary, Greece, Costa Rica, the Turks and Caicos Islands, Ghana, Czech Republic, Hong Kong, Singapore, Australia, China, and New Zealand. In addition, our program selections and geographical regions continue to grow. Recently added programs can be found in Turkey, Portugal, Bhutan, Botswana, Belgium, Sweden, Senegal, Taiwan, Thailand, Russia, Japan, and India.

Undergraduate research

www.rit.edu/research/
Research is about solving problems, and RIT recognizes that many careers require strong research skills. RIT provides a wide variety of undergraduate research opportunities—from working on research projects sponsored by business, industry, a government agency, or RIT; to an original research project in collaboration with a faculty member; to facilitating applied scientific, engineering, or market research in a corporate or industrial setting, or as part of the RIT co-op or internship programs; plus a host of other options.

A number of RIT programs offer exciting opportunities for students to engage in undergraduate research. Examples of these opportunities include:

- *The Simone Center for Innovation and Entrepreneurship*: Promoting entrepreneurial endeavors, the center offers students applied experiences, such as for-credit opportunities to consult on pre-seed and start-up ventures; a business plan competition; conferences; a minor in entrepreneurship; and courses in innovation, strategic growth, and business creativity.
- *Center for Student Innovation:* An RIT center in which multi-disciplinary student teams collaborate with faculty and staff in the conception, development, and implementation of innovative solutions to problems.
- *Biological Sciences Research Scholars Program*: A substantial hands-on experience where students execute their own high-quality research projects under the guidance of faculty mentors. Students gain valuable research experience, write papers discussing their work, present their findings, and participate in discussion and lecture series.
- *Chemistry Research Scholars Program*: Intended for students to engage in serious undergraduate research in chemistry, the program features a significant research experience for students to design and execute their own research under the direction of a faculty mentor. Participants take part in discussions and lectures, earn opportunities to travel to conferences, and present their findings.
- *Economics Undergraduate Research:* The Economics Department encourages its undergraduate students to undertake both independent and collaborative research projects. Some projects, co-authored by RIT Economics undergraduate students and faculty, are published in peer-reviewed economics research journals.
- *Undergraduate Research and Mentoring for Deaf Students in Biology*: Designed to increase the number of deaf and hard-of-hearing students performing undergraduate research in biology, the research and mentoring program features a two-year research project, seminars, and prep work that strengthens students' candidacy for graduate programs in biology.
- *Open Publishing Lab*: Based in the School of Print Media, the lab offers a place for students and faculty to collaborate on creating the next generation of publishing platforms.
- *National Science Foundation* – Research Experience for Undergraduates (REU) programs currently under way include Imaging in the Physical Sciences led by Dr. Stefi Baum, director and professor, Chester F. Carlson Center for Imaging Science; and External Graph Theory and Dynamical Systems led by Dr. Darren Narayan, professor in the School of Mathematical Science and director of Undergraduate Research.

As a culmination of the undergraduate research experience, each year RIT hosts the Undergraduate Research Symposium in August that honors RIT student research achievements. This event includes more than 100 presentations from across campus by undergraduate students who have conducted research with faculty members during the previous year.

Academic Policies and Procedures

RIT's educational mission is to prepare men and women for living and working in a democratic and technological society by offering curricula that meet those needs within an educational community that supports and encourages individual achievement in an atmosphere of pluralism and diversity. 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.

Academic advising

Academic advising is an integral part of a student's education at RIT. Advising is provided through the student's home department. Please consult the individual college sections of this bulletin for specific information.

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 advisers, 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 in writing and should include the student's full name (or name used while at RIT), student identification number, dates of attendance, and signature to assure proper identification of the record requested. Transcripts are usually prepared and available within one week after the request is received.

Under no circumstances will a partial transcript be issued, nor will a transcript be issued to a student who is indebted to RIT. Transcripts issued directly to a student will be stamped with the following: "This official transcript issued directly to the student." 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 registered. 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. 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 adviser(s) of the RIT college(s) concerned in order to assure appropriateness of the course content and course level for those courses.

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 adviser 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 adviser 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 single-letter 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:

A	Excellent	I	Incomplete*
B	Good	R	Registered†
C	Satisfactory	S	Satisfactory†
D	Minimum Passing	W	Withdrawn
E	Conditional Failure*	X	Credit by Exam
F	Failure	Z	Audit

* E and I grades are considered temporary and will revert to a grade F unless changed by the faculty within a prescribed period of time.

† R and S grades are restricted to specific types of courses.

For more specific descriptions and procedures concerning the above, see Section D5.0, Institute Policies and Procedures Manual, available in the Office of Student Affairs or on reserve at Wallace Library. The manual is available online at www.rit.edu/academicaffairs/Manual/.

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. The registration process is uncomplicated and can be accomplished in a variety of ways. Typically, students start selecting courses six to eight weeks before the academic term begins and can register online, in person at their home department or the Registrar's office, or via fax, or mail. The registration period ends on the seventh day of the term, including weekends. These first seven days of the quarter are typically known as the Add/Drop period. Specific dates and procedures can be found in the annual Registration Guide. 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

A student may withdraw from a course up to the end of the eighth week of the quarter. A grade of W will be assigned and the course retained on the student's permanent academic record. Under exceptional situations, a dean may approve a course withdrawal following the eighth week. For policies pertaining to withdrawal from the university and tuition refund please refer to the Expenses and Financial Aid section of this bulletin.

Dean's List eligibility

Matriculated students who earn at least 12 credit hours in an academic term, have a quarterly 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, E, 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 upon course work over a three-quarter period. Criteria for part-time students are essentially the same as those for full-time students. However, at least 18 credit hours must be earned during the three-quarter period, and each student must have accumulated at least 24 credit hours in his or her RIT career.

Academic probation and suspension

All matriculated students at RIT are expected to meet or exceed certain minimal academic standards. Failure to do so will result in being placed on academic probation or suspension. All such actions are taken by college deans at the end of each quarter; once the action is made, it may be changed or revoked only by a dean. The RIT educational policy governing probation and suspension is specific (see the RIT Institute Policies and Procedures, Section D5.0). Three grade-point averages (GPAs) are calculated and used in probation/suspension decisions:

Program Quarterly GPA = grade average of all courses taken in a term that are applicable to a student's degree requirements.

Principal Field of Study GPA = grade average of all courses a student has taken within his or her specialized field (usually from the student's home college).

University Cumulative GPA = grade average of all course work taken as either an undergraduate or graduate student at RIT.

Academic probation

A student will be placed on probation if his or her program quarterly grade-point average falls below 2.0* (a C average) or if his or her grade-point average in the principal field of study (based upon at least 20 credit hours attempted in the principal field at RIT) falls below 2.0.* To be removed from probation, the student must raise both averages to at least a 2.0.

Academic suspension

- Any student who is on probation, as given above, and who is not removed from probation in the two succeeding periods of study in which credit is earned will be suspended.
- Any student who has been placed on probation after having been removed from probation and whose program cumulative grade-point average is below 2.0* will be suspended. Any student who has been placed on probation after having been removed from probation and whose program cumulative grade-point average is 2.0* or above will be granted one quarter to be removed from probation before suspension.
- Any student whose program quarterly grade-point average falls below 1.00 will be suspended.
- Students who have been readmitted to the original program after having been suspended and then go on probation will be suspended.

Suspended students generally must wait at least one year before reapplying for admission into an RIT degree program. While suspended, a student may not enroll in any RIT course work, unless the suspension is waived by an academic dean. Then he or she may be limited to taking courses on a nonmatriculated basis.

*The physician assistant program requires a 2.8 grade-point average.

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.

Student retention

RIT's graduation rate for freshmen seeking bachelor's degrees is 66%. Additionally, 88% percent of first-time, full-time freshmen register for their second year (source: IPEDS 2010 Enrollment and Graduation Rate Surveys).

Student Services

Academic Support Center

www.rit.edu/asc
(585) 475-6682

The Academic Support Center provides academic assistance to students, faculty, and staff. The center offers drop-in services for mathematics/physics and writing support for all levels of students, from freshmen to graduates. In addition to skill development, the center offers workshops that teach students how to improve their study techniques and make the most of their individual learning abilities. Individualized appointments are available as well as assessment of learning challenges. Academic Support Center services are free to RIT students (structured monitoring services are fee-based).

Academic Assessment Program: The goal of the Academic Assessment Program is to help students determine why their academic performance is not what they, or others, would like it to be. The variety of factors that may interfere with academic performance includes learning style, content background, study habits and approaches, unclear choice of major, and/or disabilities. The AAP uses interviews, surveys, screening instruments, and diagnostic testing to explore potential sources of difficulty.

The AAP is designed to help students identify the source of academic problems and assist them in overcoming these obstacles by referring them to resources both on and off campus.

Institute Testing Services: Institute Testing Services is dedicated to providing design, implementation, and administration of group testing programs for ASC students, RIT students, and community groups. The department is responsible for RIT's role as a National Testing Center and supervises the administration of the Graduate Record Examination (GRE) Subject Exams, Scholastic Achievement Test (SAT), Law School Admission Test (LSAT), National Certified Counselors (NCC) certification examination, and DANTES examination. Institute Testing Services also serves as a paper and pencil proctoring site for distance learners.

Structured Monitoring Program: This program is committed to helping individuals recognize and access their natural learning abilities and offers academic coaching designed for students who anticipate difficulties navigating the complexities of the academic environment. Structured Monitoring recognizes that each student is unique and responds to this by offering three levels of check-ins: weekly, biweekly, or daily. Students may select their level of participation on a quarterly basis. This is a fee-based service.

Mathematics services: The center's math program supports students' progress in learning mathematics. Tutors are located in the Bates Study Center in Gosnell Hall. This is a drop-in tutoring center staffed with peer tutors and ASC faculty. Tutors can help students with math and physics homework, lecture notes, textbook reading, practice quizzes, and practice tests. Math review packets cover topics in algebra, trigonometry, and calculus. Students encountering difficulties in their math courses may schedule an appointment with an ASC math instructor for a math assessment. Individualized math is a non-credit, self-paced math review course offered to students who have completed a math assessment. Students follow a unique program of study based on their math background and future math needs.

Reading services: ASC reading services provides reading strategies for students who are having difficulty deciphering their textbooks. Services provided include standardized reading testing and evaluation, informal reading assessment, textbook strategies, ways to improve vocabulary, and information about speedreading. For more information, contact the Academic Support Center.

Supplemental instruction: Supplemental Instruction offers a series of weekly study sessions open to all students enrolled in **supported sections** of historically difficult courses. During SI, students meet to compare notes, discuss important concepts, and develop study strategies. These voluntary study sessions are planned and facilitated by an undergraduate student leader who has recently completed the course. To view a list of SI-supported course sections or to learn more about how to become an SI leader, please visit si.rit.edu.

Study skills: The ASC Study Skills area offers students the opportunity to meet with faculty who will assist in the development of study strategies to promote academic success. Individual instruction, coaching, and evaluation are available. Students will find a series of one-hour workshops offered each quarter that includes topics such as time management, listening and notetaking, text reading and marking, test taking, and test preparation. Student groups may request workshops and presentations from study skills faculty. Additionally, students will find materials on the ASC website.

Tutor training: A comprehensive and up-to-date website lists all available tutorial services on the RIT campus. In addition, tutor training workshops are offered for peer tutors who have been hired in any of RIT's learning centers or academic departments. The tutor training program does not offer content training. For more information visit www.rit.edu/tutoring.

Writing Center: The Writing Center provides individualized instruction designed to improve students' ability to complete college writing assignments. Writing instructors work with students at every stage of the writing process. Instruction can be provided to develop students' editing and proofreading skills. This is a drop-in center with no appointments necessary.

Study centers: Bates Study Center (1200 Gosnell) provides support in mathematics and physics. ASC Writing Center (1180 SAU) provides instruction on becoming a more effective writer. Sol Study Center (1016 Sol Heumann Hall) provides support in mathematics/physics and writing during weekday evening hours. Global Village Study Center (Study Abroad conference room) provides support in mathematics and physics during weekday evening hours.

Cooperative Education and Career Services

www.rit.edu/co-op/careers
(585) 475-2301 (voice), (585) 475-6905 (TTY)

The Office of Cooperative Education and Career Services supports the university's career focus by providing effective, high-quality services to all students and alumni.

Among the many experiential education opportunities offered, the university is best known for its cooperative education program. Initiated in 1912, the program is one of the oldest and largest in the world. Nearly 2,000 employing organizations across the country and around the world participate annually, hiring more than 3,500 students. Co-op significantly enriches students' education, providing them with the opportunity to integrate the practical experience gained through co-op with classroom and lab study.

Key student services include the following:

Individual advisement: Coordinators support specific academic units and are available to meet on a one-to-one basis with students and alumni on career development and employment. These sessions are critical in developing individual job search plans and addressing questions and issues that arise during the job search process. Coordinators are available by appointment or on a walk-in basis.

Deaf and hard-of-hearing bachelor's-level students may work with the staff of the NTID Center on Employment in addition to coordinators in the Co-op and Career Services office.

Workshops/information sessions: The office prepares co-op and graduating students for their job search through courses, workshops, and orientations. Topics include resume writing, cover letter writing, effective job search strategies, interviewing techniques, professional dress and etiquette, on-the-job success, and more.

Career and employment resources: The office and its website are both resources for informational material and useful employment and career development services. In addition, students have access to CareerSearch and Vault Career Insider Guides, two online subscription databases.

Job postings/interview opportunities: The office works hard to maintain and expand working relationships with employers in order to develop employment opportunities for all students and alumni. Through career fairs, on-campus employer interviewing programs, and specific job postings, students have access to job openings through the office website, where they can store their resumes, search a database of employment opportunities, and apply to positions online.

Work abroad program: The office is constantly establishing partnerships to assist students in obtaining meaningful work experiences overseas—many of those experiences for co-op credit. Students last year worked abroad in more than 35 countries.

Graduate school advising: Information and personalized advising on selecting and applying to graduate schools is available through the office, with dedicated services and staff to assist in the process.

Mentor program: The Career Mentoring Program is a joint initiative of the offices of Cooperative Education and Career Services and Alumni Relations. Through the program, alumni and friends volunteer to mentor current students in the areas of career exploration and information.

Ongoing communication: The office communicates regularly with students through e-newsletters, list-serves, e-mails, and a customized student website portal.

Counseling Center

www.rit.edu/counseling
(585) 475-2261

University life can be one of excitement and self-discovery. At the same time, it can generate academic, emotional, personal, social, and even financial concerns. At times these concerns can make it difficult to succeed or function while at school.

Counseling is an excellent way to address such issues, to learn more about yourself and others, and to develop new life skills.

The center's staff of professional counselors and psychologists is committed to supporting your academic and personal success. Counselors work with students whose concerns range from the everyday challenges of university life to more disruptive psychological issues. All services provided by the center are free to eligible students. Counselors fluent in American Sign Language are available for deaf and hard-of-hearing students.

Common concerns shared by students include:
- Academic performance
- Choice of major or careers
- Anxiety or stress
- Depression
- Feeling overwhelmed
- Self-esteem
- Family, friend, and partner relationships
- Eating and body image concerns
- Loss of an important relationship
- Illness or death of a loved one
- Out-of-control feelings
- Sexual orientation
- Sexual assault and violence
- Race, ethnicity, nationality, or other cultural identity
- Gender identity
- Suicidal feelings

Location: The Counseling Center is located in the August Center, immediately above the Student Health Service.
Hours:
Monday – Friday: 8:30 a.m. – 4:30 p.m.
Wednesday evenings – by appointment only
Mental health emergencies: If the emergency is life threatening, call 911 or go to the nearest emergency room. For emergencies

during business hours (8:30 a.m. – 4:30 p.m.), call (585) 475-2261 or come to the center and identify the situation as an emergency. If you or someone else is in physical danger, call Public Safety at (585) 475-3333. Do not use e-mail in an emergency situation. For after-hours emergencies, contact Public Safety or Life Line (585) 275-5151, a confidential Rochester hotline.

Career exploration counseling: Counselors can assist students in making thorough appraisals of their interests, abilities, and personality traits so they can use this information in developing educational and vocational plans. Aptitude, interest, and personality tests may be used in this assessment process.

Career exploration resources: Located in the reception area of the center, career exploration resources include occupational information on a variety of careers, as well as vocational and educational reference books. The center and its resources are available on a walk-in basis.

Confidentiality: All counseling services are confidential. The center will not release information about students without their written permission except where required by law, as required to protect a student or others from physical danger, or upon court order (an extremely rare occurrence).

Making an initial appointment: Scheduling an intake appointment is easy. Simply call (585) 475-2261 or stop by the center. During the initial visit, which lasts approximately 90 minutes, students will be asked to complete a confidential questionnaire and to briefly speak with an intake counselor about their immediate concerns.

Upon reviewing the student's intake information, a counselor will briefly explain options that may be appropriate. These might include scheduling a follow-up appointment with a counselor, getting the student into a support or therapy group, or referring the student to another RIT office for services.

If the intake counselor recommends counseling at the center, students will be assigned a counselor and scheduled for a subsequent appointment. On occasion, students are referred to community resources for specialized or continued counseling. In such instances, the center will assist them in locating a suitable resource.

Disability Services

www.rit.edu/dso
(585) 475-2023

RIT is committed to providing students with disabilities equal access to programs, services, and physical facilities, and to fostering an environment where all community members are welcomed, valued, and respected.

Students who would like to request accommodation due to a disability should submit a "Request for Accommodations" form and appropriate documentation of the disability to the Disability Services Office. The request form can be found online at www.rit.edu/dso or requested from Disability Services at (585)475-2023.

The director will review a student's request for accommodation and supporting documentation and recommend appropriate and reasonable accommodations as needed.

Diversity at RIT

www.diversity.rit.edu
(585) 475-6546

The Office for Diversity and Inclusion serves as a vital resource to develop and implement campus-wide initiatives and programs to promote diversity and inclusive excellence to students, faculty, and staff. Through various programs and special projects, the office continues to foster relationships between RIT and the greater Rochester community. The office is committed to the development of diversity education and monitors the areas that target diverse populations across the university.

Multicultural Center for Academic Success www.rit.edu/mcas (585) 475-4704

The Multicultural Center for Academic Success serves all students regardless of their ethnic background. Its mission is to aid in the retention and graduation of African American, Latin American, and Native American students. MCAS offers programs that focus on academic excellence, mentoring, community development, leadership, and professional success. MCAS also offers a variety of professional development events, cultural heritage months, celebrations of diversity, and partnerships with student clubs and organizations to help students connect with the RIT community and establish a positive sense of campus life that celebrates RIT's cultural diversity.

McNair Scholars Program www.rit.edu/mcnair (585) 475-7611

The Ronald E. McNair Post-baccalaureate Achievement Program serves a diverse group of talented second- and third-year students who are interested in pursuing post-baccalaureate education. The program provides enriching scholastic experience that prepares eligible scholars for graduate education, with an emphasis on doctoral studies. This preparation includes research experience, the presentation of research at local and regional symposiums, and graduate school seminars and workshops.

Future Stewards Program www.rit.edu/futurestewards (585) 475-4982

The Future Stewards Program was established to increase the success rate and number of Native scholars (Native American, Alaska Native, and First Nations) in science, technology, engineering, and math disciplines, along with other areas of need in Indian society. The program partners with students and Tribal nations, organizations, and corporations to create opportunities for Native scholars to develop professionally, personally, and culturally. The program is dedicated to helping Native scholars succeed by recruiting, retaining, and returning scholars to the Tribal community upon graduation.

English Language Center

www.rit.edu /studentaffairs/elc/
(585) 475-6684 (voice/TTY)

The English Language Center offers both full- and part-time study of English to non-native speakers. Class offerings include conversation, grammar, writing, vocabulary, reading, pronunciation, presentation skills, business communication, and TOEFL preparation.

Full-time program: The intensive English language program consists of 20 hours of class instruction each week at beginning, intermediate, and advanced levels. There is also a learning lab where students may work on specific language skills and obtain extra

assistance with their writing. There is a fee for English language services. This intensive study program meets the immigration requirements for the Certificate of Eligibility I-20 for F-1 student status.

Before a course of study can be selected, students are tested to determine their levels of English proficiency and diagnose their specific language needs.

Part-time program and individualized instruction: In addition to the full-time program, students may register for one or more English language courses. The center also offers private English classes tailored to individual needs. Pronunciation and conversation, as well as grammar, writing, reading, and vocabulary, may be studied in this manner. There is a fee for instruction.

Foreign language instruction: The center offers a fee-based program in which international students give lessons in their native languages. A trained language instructor supervises all student instructors. In addition to language, the international student can give lessons on the culture and customs of his or her country. Some of the languages offered have included Chinese, Japanese, Spanish, Portuguese, Hindi, Tagalog, Korean, French, and German. For more information about learning a new language or teaching your native language, call the English Language Center.

ETC Production Services

http://www.rit.edu/academicaffairs/etc/
(585) 475-7703

ETC Production Services provides non-classroom production and event support. Individual services include:

Video production services: A full range of digital standard or high-definition video services, including recording guest speakers in auditoriums, creating public relations marketing videos, producing RIT's SportsZone and SportsZone Live shows, videotaping in television studios, and editing in state-of-the-art digital post-production facilities as well as 2D and 3D animation. Finished projects can be captioned and delivered in a variety of formats, including DVD, CD, Blu-ray, podcast, Web or videotape.

Web/IT services: Multimedia and Web production services include website design and development, website updates, online registration systems, multimedia presentations, database development, and video streaming.

Event support services: Production and management of large and small venue video and multimedia productions, media projection, location shooting, multi-camera support, live video streaming, and real-time captioning.

Photography services: A range of digital photographic services in studio or on location, creating visual resources for slide presentations, class documentation, portfolios, websites, and publications.

Financial Aid and Scholarships

www.rit.edu/emcs/financialaid/
The Office of Financial Aid and Scholarships assists students and their families in identifying sources of financial aid to help meet the cost of a quality education. Currently, more than 12,000 undergraduate and graduate students receive over $200 million in financial assistance from federal, state, and institutional resources in the form of scholarships, grants, loans, and part-time employment. For more information on financial aid, scholarships, grants, and loans, please see the Financial Aid and Scholarships section of this bulletin.

First-Year Enrichment

www.rit.edu/studentaffairs/fye/
(585) 475-7033

The First-Year Enrichment program addresses the transitional needs and concerns of students as they begin their college experience. Students complete two required courses, Discovery (1720-050, 051) and Pathways (1720-052, 053), and have access to coaches who provide additional guidance and support. The courses are interactive and specifically designed to enhance the personal, academic, and professional success of first-year students and to facilitate academic and social integration into college. These courses intentionally engage students in small-group learning experiences with topics including problem solving, ethical decision making, personal and social responsibility, as well as academic fundamentals such as working in teams, managing projects, and presenting information. Course instructors serve as coaches who partner with students to provide assistance with transitional issues, establishing academic and personal goals, encouraging involvement in campus activities, and fostering connections with students' peers and their academic program.

Course descriptions: First-year transfer students who have successfully completed the equivalent of two full-time quarters (24 quarter credits) at an accredited institution of higher education and students who are at least 20 years of age may request exemption from the first-year requirement from the director of the enrichment program.

Discovery 1720-050, 051: This course focuses on topics such as independent thinking, ethical decision-making, personal and social responsibility, and utilizing campus resources. It also explores academic fundamentals such as time management and study skills. The course meets one time per week in the fall quarter. For first-year transfer students, a limited number of winter or spring sections are offered. Credit 1 (F)

Pathways 1720-052, 053: This course focuses on working in teams, project management, and the presentation of information. Course sections utilize one of three themes: leadership, innovation and creativity, or service. Students work on team projects with students from multiple majors and colleges. The course meets one time per week in either winter or spring quarter. Credit 1 (W, S)

Graduate Enrollment Services

www.rit.edu/grad
(585) 475-2229

The Office of Graduate Enrollment Services provides central information and counseling services for students interested in enrolling in graduate degree programs offered through RIT's various schools and colleges. Contact the office for assistance in selecting an academic program, exploring financial aid opportunities, registering for classes, or receiving information about any aspect of graduate study at RIT. Staff members are available from 8:30 a.m. to 6 p.m., Monday through Thursday, and from 8:30 a.m. to 4:30 p.m. on Friday. You may also refer to the current online Graduate Bulletin.

Higher Education Opportunity Program

www.rit.edu/studentaffairs/heop/
(585) 475-2506 (voice/TTY)

The Arthur O. Eve Higher Education Opportunity Program (HEOP) is a New York state- and RIT-funded program that provides eligible students with financial aid and academic support. A need-based access program, HEOP is committed to the recruitment and academic success of students with strong academic potential and personal initiative who would otherwise be excluded from higher education due to circumstances of academic and economic disadvantage.

To qualify, students must meet RIT academic criteria and financial guidelines set by the New York State Education Department. In addition to meeting economic criteria, applicants must have graduated from high school or the equivalent, be a New York state resident, never have attended college previously, and not be admissible through regular RIT admissions.

Transfer students may be eligible if they have initially attended college through an HEOP, EOP, SEEK or College Discovery program in New York state. Transfer students must apply to, and be accepted by, the HEOP office, the academic department they are applying to, and the Admissions office. HEOP transfers are accepted on a space-available basis. Please contact the office to ascertain availability prior to applying.

Students accepted as freshmen must attend and pass a four-week summer preparatory program prior to fall quarter entrance. During the summer program, students live on campus and attend classes designed to facilitate their entry into RIT. Further services for HEOP students include broad-based tutoring and comprehensive counseling services. In addition, office staff act as campus resources and advocates.

Information and Technology Services

www.rit.edu/its/
(585) 475-4357

Computing and network services at RIT are provided by Information and Technology Services (ITS).

Wireless, Google Apps at RIT, and more: The campus-wide network includes high-speed wireless capabilities in all buildings on campus (except for the Riverknoll apartments and the RIT Inn & Conference Center). All RIT students are provided access to Google Apps at RIT. Included in the Google Apps at RIT suite is RIT Gmail, the home for student e-mail accounts at RIT.

A campus-wide online portal is available at http://my.rit.edu. Users can customize their own site on the portal with personal Web links in addition to enjoying such standard features as access to student government and RIT sporting events, University News, and the Student Information System, where individual student course information and grades are posted.

ITS, in conjunction with the Educational Technology Center, manages numerous computer labs and smart classrooms containing Windows and Macintosh workstations and printers. Most of these facilities are available to students for general computing use and to faculty for reserved class work. Lab assistants help people use the hardware and software available in the labs.

RIT computer accounts: Computer accounts are issued to students, faculty, and staff so that they can perform activities supporting educational goals and internal RIT functions. New incoming students will receive instructions for setting up their computer account upon payment of their tuition deposit. This allows new students to use their accounts, get familiar with RIT online systems, and feel more a part of the RIT community before they arrive on campus.

Computer security and safeguards: RIT's Code of Conduct for Computer and Network Use guides campus-wide use of all computers and networks. This document, found online at www.rit.edu/computerconduct, outlines RIT's official policy related to ethical use of computing and network resources. ITS put into place multiple safeguards to protect RIT's network environment and the integrity of individual user accounts. Additionally, ITS provides all students, faculty, and staff with anti-virus software free of charge.

Computer-based training: ITS, along with the Center for Professional Development, provides computer-based training modules that cover a wide variety of topics. Students, faculty, and staff can access numerous online courses in the areas of technology, e-business, and business/interpersonal skills. For more information on computer-based training, visit www.rit.edu/eLearningZone.

Student employment information: ITS employs more than 250 students and is one of the largest student employers at RIT. Student employment opportunities are available at the ITS HelpDesk, in Desktop Support, at colleges through Distributed Support Services, and within Technical Support and Administrative Support services. More specific information about job opportunities within ITS is available at www.rit.edu/its/about/student_employment. Additional information about student employment opportunities can be found at the Student Employment Office site at www.rit.edu/seo.

Residential Networking (Resnet): Residential Networking provides computer support to students living in residential housing at RIT. The Resnet team can assist students with connecting their computers to the RIT network, accessing campus computing resources, and troubleshooting computer software and hardware. Contact Resnet at (585) 475-2600 (voice), (585) 475-4927 (TTY), or resnet@rit.edu, or visit http://resnet.rit.edu.

Contacting the HelpDesk: The ITS HelpDesk is located in room 1113 of Gannett Hall. Contact HelpDesk staff via telephone/TTY, e-mail, or the Internet:

(585) 475-HELP (4357)
(585) 475-2810 (TTY)
E-mail: helpdesk@rit.edu
Online: www.rit.edu/its/help

Service hours
Fall, winter, and spring quarter hours:
Monday-Thursday: 7:30 a.m. to 9 p.m.
Friday: 7:30 a.m. to 5 p.m.
Saturday-Sunday: Noon to 5 p.m.
Summer quarter, holidays, and quarter breaks:
Monday-Friday: 7:30 a.m. to 5 p.m.
Saturday-Sunday: Closed

International Student Services

http://www.rit.edu/studentaffairs/iss/
(585) 475-6943 (voice/TTY)

International Student Services is the primary resource for more than 1,600 hearing and deaf international students from 100 countries, as well as for members of the campus community seeking cross-cultural information. The office provides assistance with immigration regulations and travel documents, helps international

students adjust to academic and cultural expectations in the United States, and provides cross-cultural programming for international students and the campus at large. The staff works closely with Global Union, international student clubs, and International House (the special-interest house in the residence halls for both international and American students). Off-campus programs are regularly coordinated with the Rochester International Council.

Leadership Institute and Community Service Center

www.rit.edu/lead
(585) 475-6974

The Leadership Institute and Community Service Center provides a variety of experiences for students to engage in and learn about leadership and community service. Some examples of our opportunities include: a weekend leadership adventure with ropes course, a leadership certificate program, four different leadership courses, a corporate and an RIT leadership conference, a public speaking series, an alternative spring-break program, participation in the American Heart Walk and Hillside's Special Santa drive, and volunteer connections with more than 260 agencies in the Rochester area. For more information on leadership and community service opportunities, call or contact us via the Web.

Libraries

library.rit.edu

The RIT Libraries includes the Wallace Library, the Cary Collection, the RIT Archive Collections, and the RIT museum. In addition, the Lawson Center, home to the RIT Cary Graphic Arts Press and the RIT Press, can be found within the Wallace Library.

Wallace Library is a high technology, multimedia resource center. It offers hundreds of databases and thousands of electronic books and journals, as well as traditional printed resources. Online resources can be accessed onsite, or around the clock from any location. Online course reading assignments and laptops are among the many other resources available in the Wallace Library.

If the library does not have what you need, it can be ordered through Information Delivery Services (IDS). Millions of additional books are available via ConnectNY, a service that provides access to the collections of 14 academic libraries in New York state. The Rochester Regional Library Council's Access program allows patrons to obtain a library card that offers access to other area libraries, including the University of Rochester and the state university colleges at Geneseo and Brockport.

Each college has a subject expert in the library to help with research. These subject experts are available seven days a week for individual assistance, while in-depth assistance is also available by appointment. You can connect with the subject experts by phone, e-mail or instant messaging. The Scholarly Publishing Studio provides one-stop service for advice and assistance in preparing research, articles, books, and other documents for publication.

Quiet study spaces for individuals and groups are available throughout the Wallace Library. Students can reserve group study rooms online. Java Wally's café is also a favorite spot for relaxing, studying, or meeting in an informal setting.

The Cary Library is a unique collection of more than 14,000 volumes of rare books illustrating fine printing and other materials detailing the history of printing, book design and illustration, papermaking, and other aspects of the graphic arts. The RIT Archive Collections acquires, organizes, preserves and displays materials from the university's past. It is the primary resource for studying the history of the university.

Wallace Library is open more than 100 hours a week, with extended hours before and during finals.

Margaret's House

www.rit.edu/studentaffairs/margaretshouse
(585) 475-5176 (voice/TTY)

Childcare programs: Margaret's House is a state-licensed childcare center offering full-day quality care and education for children 8 weeks to 8 years of age. It includes a district-approved full-day kindergarten as well as after-school, vacation, and summer programs. The center is open to children of RIT students, faculty, and staff and to members of the greater Rochester community. Margaret's House is located on campus and is open year-round. Call for information and registration material.
- Infant and toddler programs: 8 weeks to 36 months
- Preschool programs: 3- and 4-year-olds
- Full-day kindergarten/after-school programs: 5- to 8-year-olds
- Lil' Kids on Campus summer program for children entering grades 1 through 4

New Student Orientation

www.rit.edu/studentaffairs/orientation/
(585) 475-7995 (voice/TTY)

RIT provides all entering students with programs designed to prepare them for a successful transition and adjustment to college life and further acquaint them and their families with the RIT community. Our programs provide the opportunity to:
- meet the faculty and dean of the student's college,
- address the academic and social issues involved in beginning college or transferring from one college to another,
- attend academic planning sessions,
- learn about student services,
- understand the family's role in promoting student achievement and success,
- learn about financing a college education, and
- participate in community and social activities.

Our fall orientation programs are offered prior to the start of classes. The first-year student program lasts five days, and attendance is required. Transfer students participate in a series of programs designed to meet their unique needs. Brief mini-orientations are offered at the start of the winter and spring quarters.

NTID Resources

www.ntid.rit.edu/students/resources/academic

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.ntid.rit.edu/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;
- educational workshops (tied either to credit-bearing courses or independent experiences) addressing skills, knowledge, and attitudes important for success in college and beyond;
- computers supporting tutorial activities and course assignments as well as independent student work; and
- designated areas for individual and small-group tutoring and studying.

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;
- 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 PC workstations and wireless Mac Book laptops; an IdeaBoard with networked capabilities; a central projector/display system; a matrix router enabling versatile distribution of information to computer monitors and wall-mounted displays throughout the room; and two built-in videoconferencing systems.

NTID Self-Instruction Lab

www.ntid.rit.edu/aslie/sil.php

The Self-Instruction Lab supports American Sign Language and spoken language skill development. The lab serves students, faculty, and staff as well as the greater Rochester community.

Improving and maintaining communication and language skills requires drill and practice. The lab offers resources for practicing both expressive and receptive communication skills within a self-instruction format. These resources include materials related to American Sign Language, speechreading skills, listening skills, Spanish, cultural and creative studies, and English. Many of the lab's materials are designed to supplement classroom instruction but may also be used for independent practice and study.

Workstations are equipped so that learners can use instructional video resources, computer programs, and audio resources. The lab also offers two private video production rooms where learners can record themselves individually or interacting with another person using split-screen technology. There are also flex cams and a digital video workstation available for making video recordings.

Communication studies and services

www.ntid.rit.edu/css

NTID strongly encourages all students to expand their communication skills to communicate with diverse audiences in educational, civic, and professional settings. Communication studies focuses 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, the department of American Sign Language and interpreting education, and the department of cultural and creative studies 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 program 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: Faculty and staff who work in speech and language services 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 faculty or staff or on a walk-in basis through the Spoken Language Learning and Practice Lab. This lab has individual workstations for pronunciation practice, computers for speech and language practice and visual feedback, and stations for digital recording and playback. The faculty and staff in the department are certified by the American Speech-Language-Hearing Association.

Audiology services: The audiology faculty/staff 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 Hearing Aid Shop (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. Faculty/staff are available daily in the Hearing Aid Shop to discuss issues related to hearing loss, tinnitus, cochlear implants, and other areas. FM systems can be loaned to students for the academic year at no cost.

Students can go to the Hearing Aid Shop to purchase hearing aid 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/staff as well as with consultant ophthalmologists and optologists 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/counselingdept
(585) 475-6468 (voice)

NTID Counseling and Academic Advising Services is committed to helping students realize their full potential for a successful college experience. In pursuit of this goal, each NTID-sponsored student is assigned a professionally trained counselor who provides a full complement of counseling, advising, assessment, advocacy, and referral services. Counselors are trained in career development theory and techniques. Some hold individual certifications from the National Board for Certified Counselors. All counselors follow the guidelines for ethical standards set forth by the American Counseling Association. Counselors assist with student orientation, educational and career planning, adjustment to college life, study-skill development, access and referral to on-campus and community resources, and a wide range of personal and interpersonal concerns.

NTID Mental Health Services

(585) 475-2261/6897 (TTY)
(585) 475-3333 (after hours)

The Counseling Center provides confidential mental health counseling to all hearing, deaf, and hard-of-hearing students requesting assistance. Members of the center work closely with RIT's Student Health Center, the Center for Residence Life, the NTID Counseling and Academic Advising Services department, Public Safety, and related campus units. Some of the counselors at the center are fluent in sign language.

Some concerns that students may need help resolving include medication referral and management, depression, anxiety, family conflicts, intimate relationships, and sexual and personal identity matters. Workshops, discussion groups, and group counseling on topics such as stress management, eating disorders, managing emotions, and improving relationships also are offered.

A 24-hour emergency crisis intervention service for students experiencing mental or emotional trauma is provided in conjunction with other relevant campus units.

NTID Student Life Team

(866) 761-3896 (VP/VRS)

The Student Life Team is committed to providing quality co-curricular programs designed to help students enhance their quality of life, sense of relevancy to their studies, and overall satisfaction with and success in college. Through collaboration with other units within NTID and RIT, creative program strategies, and commitment to utilizing student paraprofessionals, the Student Life Team emphasizes cultural diversity, minority student support, leadership development, deaf culture and ASL, and contemporary social issues.

NTID Wellness, Intercollegiate Athletics, and Intramural Support

www.rit.edu/studentaffairs/ciar/
(585) 475-6104

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 Intercollegiate Athletics and Recreation. 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 athletics. Mentoring is available. Leadership and other workshops are provided for deaf athletes throughout the year. Liaison services and educational programs are provided to the center's faculty and staff, athletic teams, and student employees.

NTID Summer Vestibule Program

www.ntid.rit.edu/svp

The Summer Vestibule Program is NTID's required orientation program for new deaf and hard-of-hearing students that assists and prepares them for complex tasks; i.e., career awareness, decision making, adjustment to college life, and assessment of academic skills and competencies. During the program, students learn about the programs offered at NTID and the other RIT colleges, while faculty and staff members evaluate students' skills, abilities, and motivation. Through this process, students gain information that assists in the selection or confirmation of an appropriate program and the design of their individual academic plans.

Acceptance into the program does not automatically guarantee admission to the program the student selects. The final decision on acceptance into a program of study for the fall quarter is the responsibility of each academic department. Admission to a program depends on successfully completing the program, having requisite skills to begin the program, and availability of space in that program.

During the program, students participate in various activities, including orientation to college services and academic expectations, career sampling, career planning, and placement assessment in mathematics and English. Recreational and social activities also are part of the program.

NTID Support Service Orientation Workshops

The NTID Support Service orientation workshops are designed for deaf and hard-of-hearing students who have been accepted into an RIT bachelor's degree program. These workshops provide students with information on how to use the various NTID educational access and support services available to them, acquaint them with RIT's campus and services, and allow them to meet other new students as well as their department's chairperson and faculty members, who will assist them with fall quarter class registration and support services throughout the year.

Parking and Transportation Services

http://facilities.rit.edu/pats
(585) 475-2074

To maintain order and safety, the Parking and Transportation Services department maintains parking policies that require all vehicles operated on campus by students, faculty, and staff to be registered within 10 days of arrival on campus. Students are not required to own the vehicle to register it, however, the address used to register the vehicle must be the same address where students reside while attending classes or working at RIT.

Transportation services are provided free of charge for all RIT housing residents, Park Point residents, and The Province residents via a shuttle service, which makes regularly scheduled stops to and from the academic areas on campus, housing areas, and other pertinent campus locations.

The Parking and Transportation Services office is located in Grace Watson Hall and is open Monday through Friday from 8 a.m. until 5 p.m. during the academic year. Summer hours may vary.

Bus and shuttle services: Transportation Services operates a van service for those with impaired mobility. The service runs Monday through Friday, 7 a.m. to 6 p.m., during fall, winter, and spring quarters. The transportation division also provides vans for use by student groups, clubs, and organizations.

Parking permits and vehicle registration: All vehicles operated on campus must be registered with the parking office annually. Vehicle registration decals must be properly displayed on each vehicle. Fines are imposed for those in violation of RIT parking and traffic regulations. We encourage everyone to become fully familiar with RIT parking policies and procedures, including online registration.

Handicap parking permits: RIT honors ADA-approved handicap parking permits from every state. Handicap parking permits can be obtained at local municipalities. Resident students can apply for a New York state permit at the Town of Henrietta. The RIT parking office does issue a one-week temporary handicap permit.

Part-time Enrollment Services

www.rit.edu/parttime
(585) 475-2229

The Office of Part-time Enrollment Services provides central information and counseling services for students interested in enrolling in part-time and online studies offered through RIT's various schools and colleges. Contact the office if you need assistance with selecting an academic program, exploring financial aid opportunities, registering for classes, or receiving information about any aspect of part-time study at RIT.

Staff members are available from 8:30 a.m. to 6 p.m., Monday through Thursday, and from 8:30 a.m. to 4:30 p.m. on Friday.

Public Safety

http://finweb.rit.edu/publicsafety/
(585) 475-2853
(585) 475-333 (Emergency Line)

The Public Safety Department is open 24-hours-a-day and is located in Grace Watson Hall. To report an emergency call (585) 475-3333 or instant message staff at IM:ritpublicsafety. 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.

The department provides the following services:

Blue light call boxes: Campus courtesy call boxes, identified by a blue light, are located across campus. These call boxes provide 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 may be used to request an escort, assist a motorist, report suspicious individuals or activity, or request access to a locked building or room.

Mobile escort service: Public Safety strongly encourages students to use the mobile escort service. The service is available to anyone, seven-days-a-week, on a timed schedule between 11 p.m. and 3 a.m. Call the Public Safety Department at (585) 475-2853 (IM: ritpublicsafety) or use one of the blue light courtesy call boxes located across campus.

Lost and found: All items lost and found on campus are stored by the Public Safety Department. To report an item lost, please visit https://finweb.rit.edu/publicsafety/safety/lostitems.html to submit information related to lost property. Public Safety will contact you if the item is found on campus.

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 (585) 475-6654 (TTY). Public safety will locate the student and relay the message.

Presentation programs: Throughout the year, public safety hosts a variety of prevention awareness programs and services on various topics including crime prevention, personal safety, and alcohol awareness. Quarterly newsletters are distributed via e-mail to all students to bolster safety awareness on campus.

Annual Safety and Security Report: Public safety's security report is available online and offers a description of security practices and information on reported occurrences of crime. Access the report at: http://finweb.rit.edu/publicsafety/ritsaftey2010.pdf

Confidential tip line: The goal in providing this service is to obtain information that is unattainable through conventional methods and to alert public safety to endangering behavior that might go otherwise unreported. Individuals who utilize the tip line are encouraged to leave their names and contact information; however, they will not be contacted. http://finweb.rit.edu/publicsafety/forms/tipline/

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 at the Department of Education website (http://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 hotline: Confidential counseling services are available to anyone in need by calling (585) 546-2777 (voice/TTY).

Emergency Preparedness: RIT's emergency responses are based on a national model that is very flexible and can be applied to any scenario. 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, and the university's website at http://www.rit.edu/.

Religious Life

www.rit.edu/studentaffairs/religion/
(585) 475-2135

The Center for Religious Life is unique in the RIT community. Recognizing the balance of mind and spirit, the chaplain staff, housed in the Schmitt Interfaith Center, provide worship and observances within diverse religious and cultural traditions. Non-denominational Christian, Southern Baptist, Catholic, Muslim,

Jewish, Hindu, Lutheran, and Orthodox Christian are among the many communities serving campus needs and interests. Several religious clubs, including InterVaristy Christian Fellowship and Campus Crusade for Christ, also gather each week on campus. In a time of intellectual and spiritual growth, the center establishes an affirming environment for students, faculty, and staff to explore and discuss values informed by religious beliefs.

The Kilian J. and Caroline F. Schmitt Interfaith Center

The Interfaith Center, a gift of Kilian and Caroline Schmitt and other generous donors, is located on the east side of the Student Alumni Union. It is a focal point for the diverse religious traditions within the university, housing two chapels, meeting rooms, and offices for the campus ministry staff.

The RITreat

The RITreat is an area in the Student Alumni Union dedicated to students. The following resources can be found in the RITreat:

- Club and organization space
- Computers/word processors/fax machine
- Ombuds Office
- Student Government Office, also housing an attorney two mornings a week
- Mail folders for clubs and organizations
- Off-campus and Apartment Student Association
- Study tables/lounge area
- Center for Campus Life
- The RIT Leadership and Community Service Center

Student Financial Services

http://finweb.rit.edu/sfs/
(585) 475-6186

Student Financial Services offers a variety of financial services for students, including billing, payment options, and loan repayment. The University has an electronic billing (eServices) program for students; eBills have replaced paper bill statements. Each quarter, all RIT students are sent an e-mail notification to their University e-mail account stating that their eBill is available. Students have the option of selecting three additional e-mail addresses to allow for a parent, guardian, sponsor or other authorized user to receive eBill notifications. This facilitates online, real-time account inquiry and electronic payment.

Student Health Center

www.rit.edu/studentaffairs/studenthealth/
(585) 475-2255 (v), (585) 475-5515(tty)

The Student Health Center provides primary medical care on an outpatient basis. The staff includes physicians, nurse practitioners, physician assistants, registered nurses, health educators, an alcohol/drug counselor, and an interpreter for the deaf. Services are available by appointment. Health education programs also are provided.

The Student Health Center is located along the walkway linking the academic and residence hall areas of the campus. Students are seen Monday through Thursday, 8:30 a.m. to 6:30 p.m., and Friday, 8:30 a.m. to 4:30 p.m., by appointment. Emergencies are seen as need requires. Hours are subject to change and are posted.

The university requires students to maintain health insurance coverage—which they may purchase either on their own or through RIT—as long as they are enrolled at the university.

The quarterly student health fee is mandatory for all full-time undergraduate students. All other students may pay either the quarterly fee or a fee for service. Some laboratory work ordered through the Student Health Center is not covered by this fee; there is an additional charge for this service. Prescription medicines may be purchased from local pharmacies or, for some specific prescriptions, from the Student Health Center. The health fee does not include prescription medications.

Questions about the Student Health Center should be directed to the office. Questions regarding health insurance available through RIT should be directed to University Health Plans at (800) 437-6448.

RIT ambulance

(585) 475-3333 (voice) or (585) 475-6654 (TTY)

RIT ambulance is a New York state certified volunteer ambulance service that serves the campus community, including its adjoining apartment complexes. The organization, an auxiliary of the Student Health Center, is governed by RIT students and staff and is staffed by emergency medical technicians. Ambulance service is available 24 hours a day, seven days a week. If, for some reason, RIT ambulance is not available, there may be a charge for services provided by another corps.

Health records

Medical records are confidential. Information will not be 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 or a court-ordered subpoena or in a life-threatening situation.

New York state and RIT immunization requirements

New York state public law requires that all students enrolled for more than 4 quarter credit hours in a term and born after January 1, 1957, must provide proof of having received the appropriate immunizations against measles, rubella, and mumps or of having immunity to each disease validated by laboratory results from blood titers. Immunization requirements include two measles vaccinations, at least one month apart, after the first birthday; and one vaccination each against mumps and rubella after the first birthday. RIT requires that these immunizations be given in two doses of combined MMR vaccine at least 30 days apart. New York State requires students to sign the meningitis awareness form. RIT requires all students age 26 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 community until compliance is obtained.

Other immunization requirements include Hepatitis B, TD booster, and PPD (for students from high-risk areas). Additional information concerning these requirements, the necessary documentation, and where documentation must be sent is included with the Admissions Office acceptance packet and also available on the center's website.

TRiO Student Support Services

www.rit.edu/studentaffairs/triosss
(585) 475-2833

TRiO Student Support Services (SSS) is a federally funded program, through the Department of Education, that provides the academic and personal support that assists qualified students to maintain good academic standing and complete their degree. Students in the TRiO SSS program must be U.S. citizens or international students with a green card, full-time undergraduate students, and meet at least one of these qualifications: financial need, a documented disability, or first-generation college student status, and have an academic need.

TRiO SSS provides the following services:
• One-on-one peer content tutoring
• Individual assessment and mentoring in math
• Professional tutoring in writing and liberal arts courses
• Assistance with the financial aid process and scholarship searches
• Financial literacy
• Assistance with the graduate school process
• Assistance with course selection and advisement

Students can enter the program at any time during their college career and are assigned a support specialist until they graduate. Support specialists assist students with setting goals and successfully navigating through their college experience.

Veteran Enrollment Services

www.rit.edu/emcs/ptgrad/veterans.php3
(585) 475-6641

If you have questions regarding VA Benefits, NYS War Veteran Scholarships, TA, or the RIT Active Duty Service Member Scholarship, contact RIT's Veteran Enrollment Services.

All RIT courses and programs are approved for the education of members of the U.S. Armed Forces, veterans, and eligible dependents under the Veterans Readjustment Benefits Act, the Rehabilitation Act, and the War Orphans Act.

To receive information or apply for benefits, contact us through our Web page, call, or live chat. Eligible students must submit an application for the VA Certificate of Eligibility. This application can be submitted online through the VA'S website. All VA educational benefits paid to RIT students are the responsibility of the VA Regional Office in Buffalo, N.Y. We can send most enrollment information well in advance of the beginning of the starting quarter, thus eliminating long delays in payments. Applications for all benefits are available online, at local VA offices, or on campus in the Office of Veteran Enrollment Services. To ensure a smooth transition and successful academic program completion, start your benefits paperwork early.

The Center For Women and Gender

www.rit.edu/studentaffairs/womenscenter/
(585) 475-7464

The Center for Women and Gender is committed to promoting a campus community that is safe, equitable, and respectful of all members. The center fosters an educational environment in which all community members can be personally, academically, and professionally successful without regard to gender, racial/ethnic origins, sexual orientation, gender identity, socio-economic status, or spiritual beliefs.

The center provides programs and services that address relationship and sexuality issues, pregnancy, body image issues, harassment and discrimination, assertiveness, and sexual assault. Services and programs serve women, men, deaf, hearing, and the LGBT communities.

The RIT Community

Residence Life

www.rit.edu/reslife

The Center for Residence Life serves the needs of approximately 7,100 students in residence halls, Greek houses, Global Village, special-interest houses, lifestyle floors, the RIT Inn and Conference Center, University Commons Suites, and apartments. The center helps create a supportive living environment that enhances individual development and promotes a strong sense of campus community.

RIT recognizes the significance of the on-campus living experience and its effect on students' academic and social development. To ensure a positive experience, the residence halls offer a comprehensive campus living experience.

The center staff plans events on each floor of the residence halls as well as larger scale events in each quad area. Social activities at the beginning of the year are designed to help students meet one another, make friends, become familiar with campus resources, and generally ease their transition to college life. Programs are continually offered throughout the year on a variety of topics, including diversity awareness, time management, study skills, personal safety, wellness, decision making, and roommate agreements.

Housing

Serving nearly 7,000 students, RIT's residence halls, the RIT Inn and Conference Center, and campus apartments offer many living options to meet the diverse needs, interests, and backgrounds of our students. They may choose from a variety of living arrangements, including residence hall floor assignments such as same gender, coeducational, wellness, alcohol/substance free, intensified study, over 21 years of age, or mainstream (hearing/deaf students living on the same floor). Living options in Greek fraternities and sororities or special-interest houses also are available. Internet and campus data network access is available in all residence hall rooms.

RIT also houses students in nearly 1,000 individual townhouse and apartment units. Apartment housing is available to students in five RIT apartment complexes.

Approximately 400 upperclass students are housed at the university-operated RIT Inn and Conference Center, near the campus. Residents of the RIT Inn enjoy many of the perks of a first-rate hotel, including indoor and outdoor swimming pools and a fitness center.

Residence halls

The RIT community begins in the 13 campus residence halls, where more than 3,400 first-year and returning students reside each year. It is in these halls where engineering students live side-by-side with art students, international students mix with students from other cultures, and hearing and deaf students experience each others' cultures. The residence halls are a diverse and exciting living experience.

Lifestyle floors, Learning Communities, and special-interest houses provide additional options for a more personalized living environment. Special-interest houses are designed for students to share mutual interests. Seven houses offer a specific academic focus and provide a way to tailor activities to a common group. The seven special-interest houses are self-governing organizations with a resident adviser living on the floor: Art House, Computer Science House, Engineering House, House of General Science, International House, Photo House, and Unity House.

Apartments

RIT's apartment complexes offer a more independent living experience while extending the advantages of living on campus. Apartments include one-, two-, and four-bedroom units, and townhouses have two or three bedrooms.

Although the majority of apartment residents are undergraduates, each complex features a mixture of graduate and undergraduate, single and married students. Each complex offers the privacy of a small community, with individual mail and newspaper delivery. Apartment residents enjoy other community benefits such as basketball and volleyball courts, barbecues, and picnic areas.

RIT Inn and Conference Center

A living experience for upperclass students, the Inn and Conference Center features a hotel-like setting. Each room includes high-speed Internet access. The inn features indoor and outdoor pools, a sauna, a whirlpool, a fitness center, and a business center. Café dining and a gourmet coffee shop are also located on the premises.

The Residence Hall Association

Representing all residential students and serving as a liaison between the student body and the administration, the RHA develops the policies and procedures that benefit the resident population. RHA also provides students with a variety of services, facilities, programs, and equipment, including RITchie's, a free game room managed by the association that features a relaxing lounge with video games (X-Box, Playstation 2, and Gamecube); pool, air hockey, and foosball tables; and a variety of board games.

The Housing Connection

A service of RIT Housing Operations, the Housing Connection is designed to meet the general housing needs of the RIT community. It offers the only on-campus clearinghouse for apartment residents in need of additional roommates, providing a continually updated listing of available roommates and their specific interests.

Off-Campus and Apartment Student Association

www.rit.edu/studentaffairs/ocasa/
(585) 475-6680 (voice/TTY)

The Off-Campus and Apartment Student Association (OCASA) is the representative student government for all RIT students who do not reside in a residence hall. Formed in 1978, OCASA is composed of both commuter students and students who live in the RIT-operated apartment complexes or in off-campus apartments. OCASA provides input from off-campus students to the RIT administration.

The OCASA main office, located in the Student Alumni Union RITreat, offers complimentary services that include an area with PCs and Macintosh computers, a copier, fax machine, and various office supplies. Also available are a microwave; refrigerator; and free coffee, tea, and hot chocolate. A daily newspaper and a variety of magazines are on hand.

Intercollegiate Athletics and Recreation

http://www.rit.edu/ciar

The Center for Intercollegiate Athletics and Recreation oversees the athletics, recreation, intramurals, and wellness programs.

Athletics

The Intercollegiate Athletics program consists of one NCAA Division I team (men's ice hockey) and 23 Division III teams. Athletics are conducted in accordance with the National Collegiate Athletic Association (NCAA) Division III rules and the Atlantic Hockey Association. The athletics program serves approximately 650 student athletes with 24 men's and women's varsity sports.

RIT Athletics supports its student athletes in their academic endeavors as well. They achieve an impressive overall grade point average that exceeds that of the general student population.

Sports offered through the Intercollegiate Athletics program promote development of leadership skills and values as well as campus spirit and provide visibility for the university.

Recreation

All registered students are provided with the benefit of automatic access to the recreation facilities. Students who are registered only for a wellness class will be provided with access if the class is needed to fulfill a graduation requirement. Access is granted upon review by the Student Life Center (SLC) main office. During the summer, free access is granted to students registered for the previous spring and the upcoming fall quarters. Students must contact the SLC main office to activate their summer membership. Incoming freshmen receive access on the first day of Freshman Orientation.

Facilities

Clark Gymnasium: Located across from the Campus Center, the Clark complex includes the main gymnasium, auxiliary gymnasium, wresting room, varsity weight room, athletic training room, and equipment room.

Hale-Andrews Student Life Center (SLC): The SLC is located midway between the dormitories and the Student Alumni Union. It is an 88,000-square-foot complex that features five multipurpose courts (basketball, volleyball, badminton), seven racquetball courts (three equipped for wallyball), two dance studios/fitness rooms, a mini-gym (basketball, volleyball, and multi-purpose court), elevated 200-meter jogging track, equipment cage (for loan-out and towel service), spinning room, boxing/kick-bag room, locker rooms with saunas, classrooms, CPR room, and an equipment rental office for overnight loan-out.

Gordon Field House and Activities Center: Directly attached to the SLC, this 160,000-square-foot facility includes a multi-purpose arena, 200-meter jogging track, four indoor tennis courts, a multi-level fitness center, and an aquatics center with an eight-lane competitive pool with moveable bulkhead, diving area, recreational pool, and hot tub.

Tennis courts: There are nine outdoor lighted tennis courts.

Turf field: This field is an outdoor multi-purpose venue for athletics, wellness, recreation, and major campus events.

Varsity game field/track complex: This facility is used for varsity soccer, lacrosse, and track meets and features a 400-meter track that is open for daily use.

Other outdoor facilities: Other fields include varsity baseball, varsity softball, varsity practice fields, club sports field, Greek lawn area, Rose Bowl, Grace Watson fields, nature trails, jogging trails, and archery range.

Red Barn: Red Barn houses the interactive adventures program, which includes an array of adventure-based wellness activity classes, teambuilding programs, and the Red Barn climbing gym, which consists of a 32-foot top-roping wall and extensive bouldering areas.

Frank Ritter Ice Arena: A venue for ice hockey, figure skating classes, and recreational skating, the Ritter Arena serves as the home of the men's and women's ice hockey teams as well as the Genesee Figure Skating Club. Public skating and learn-to-skate programs are also held here.

Intramurals

Intramurals offer a wide range of activities for students, faculty, and staff. The tournament league is designed for those who want to play in a more competitive, elimination-playoff-type format. There is also a recreational league, in which league champions are based on win-loss record and there are no playoffs. Tournament and recreational play is separated into three divisions, including a co-ed division. Each co-ed team must have specific numbers of men and women on the playing field, depending on the sport.

The following sports are offered: indoor soccer, three-on-three basketball, five-on-five basketball (winter and spring), volleyball, ultimate Frisbee (fall and spring), dodgeball, flag football (fall), softball (fall and spring), tennis (fall and spring), table tennis, racquetball, and badminton.

Wellness

The wellness instructional program is offered to students, faculty, staff, and alumni (with current SLC memberships). More than 200 courses are offered each quarter in the following categories: health and wellness seminars, dance, fitness, life support and safety, lifetime recreation and leisure, interactive adventures, martial arts, and ROTC.

Campus social events

The RIT campus is a melting pot of activity and fun for all students. During the course of the year clubs and organizations host more than 700 student events. In addition, major social events are a part of the campus culture and can be found on the RIT calendar at all times of the year. RIT sponsors a variety of events beginning with the Week of Welcome during New Student Orientation and ending with Senior Night for graduating seniors.

Between these bookend events, RIT sponsors the Brick City Festival, which also encompasses Parents and Alumni Weekend, and Spring Fest, with its traditional carnival. Major concerts are held four to five times a year. Past concerts have featured Kanye West, Ludacris, Lupe Fiasco, and Taking Back Sunday. RIT also has hosted comedians such as Wayne Brady, David Spade, Dane Cook, Carlos Mencia, and Jon Stewart. The Cultural Spotlight Series and the Performing Artists' Series feature cultural events with a variety of performers. Past series have included performances and artists such as Maya Angelou, Edward James Olmos, Rochester Classic Jazz Band, Yo Soy Latina, Aventura, the Rochester Philharmonic Orchestra, Richard Smallwood and Vision, Byron Cage, and Kurt Carr and the Kurt Carr Singers.

Numerous speakers, including Magic Johnson, Colin Powell, Robert Redford, Rudolph Giuliani, and former presidents Gerald Ford, Jimmy Carter, and Bill Clinton have spoken at campus events. The RIT Players hold quarterly theater productions. Weekend evenings feature a number of activities, such as the Thursday Night Cinema Series and Friday Night in the RITZ. Other events are held annually, including the RHA Vegas Night, RIT Greek Week, and the CAB Winter Concert. Every other year, the College of Liberal Arts sponsors a musical theater production and NTID hosts the RIT/Gallaudet Weekend.

Student Government

http://sg.rit.edu/
(585) 475-2204 (voice/TTY)

Student Government, the representative body for students, works with the university's administration, faculty, and staff to communicate the needs and desires of the student body and the decisions of the administration to RIT students. It provides a variety of services to student organizations and recognizes approximately 160 clubs and eight other major organizations. It actively engages in the university's open governance system where it serves as the voice of students.

All full-time and part-time undergraduate and full-time graduate students become members of the Student Government when they pay the student activities fee.

Student Government clubs

http://campuslife.rit.edu/clubs
(585) 475-4483 (voice/TTY)

For more information about the following clubs, please contact the Clubs Office at (585) 475-4483 (voice/TTY), visit our website at http://campuslife.rit.edu/main/clubs/index, or stop by the office in the RITreat. Look for the quarterly Club Day in the Student Alumni Union. The following is a list of recognized clubs. More are added throughout the academic year. For the most up-to-date information, visit the website.

Career Related
AIGA (Graphic Arts)
ASCE (Civil Engineers)
Aero-Design Club
American Marketing Association
Animal Advocacy Group
Audio FX
Biomedical Photo Student Association
Ceramics Guild
Chem Club
Electric Bike Club
Emerging Black Artists
Engineers for a Sustainable World
Financial Management Association
Forensic Science Club
Game Developers Club
Gamma Epsilon Tau
Glass Guild
Graduate Management Association
Hospitality Association
IDEA (Interior Design)
IIE (Industrial Engineers)
ITSO (Information Technology)
International Business Group
Jewelry and Metals Association
Life Science Club
MESA (Microelectronic Engineering)
MISST (Management of Information Systems)
MacRIT
Malaysian Student Association
Materials Research Society–RIT Chapter

National Press Photographers Association
National Society of Black Engineers
New Media Fusion
PUB
Physician Assistant Student Association
Pi RIT
Premedical Student Association
Psychology Club
SHPE (Hispanic Engineers)
SPARSA (Security Practices)
SSWO (Social Work)
Society of Manufacturing Engineers
Society of Plastics Engineers
Student Dietetic Association
Society of African American Business Students
Student Interpreting Association
TPSA (Technical Photographer)
Ultrasound Student Association
Women in Technology

Ethnic
Asian Culture Society
Asian Deaf Club
Caribbean Deaf Club
Caribbean Student Association
Chinese Student Scholar Association
DISA (Deaf International)
Ebony Club
Hispanic Deaf Club
Kazakh Group of Bolashakers
Korean Student Association
LASA (Latin American)
OASIS (Indian Student Alliance)
Organization of African Students
Piazza Italiana
Taiwanese Student Association
Vietnamese Student Association

Hobby and special interest
Alpha Phi Omega
Amateur Radio Club
Anime Club
Ballroom Dance Club
Break Dancing Club
College Democrats
College Republicans
Comedy Troupe
Country Line Dancing Club
Creative Outlet
Dance Team
Dead Saints Society
Debate Society
Doves
Electronic Gaming Society
Empty Sky Go Club
FACES (Feminist Group)
FIRST
Formula SAE Racing Team
Graduate Photography Association
Habitat for Humanity

Hooks and Needles
Human Powered Vehicle Team
International Socialist Organization
Invisible Children–RIT Chapter
Juggling Club
Linux Users Group
Masquers Drama Club
Metalworks
Micro-Air Vehicle Club
Mini-Baja Club
Model Railroad Club
Offroaders
Outing Club
Patent Club
RIsTep
RIT Gay Alliance
RIT Greenvehicle Team
RIT Players
RITveg
RWAG (Wargamers)
Rally Enthusiast Club
Robotics Club
Rotaract
SEAL (Environmental Action)
Signatures Magazine
Social Action Group
Spectrum
Students for Cambodian Schools
Students in Free Enterprise
Swing Dance Club
Table Tennis Club
Wood Club

Music related
Gospel Ensemble
Jazz Messengers
Pep Band
Student Music Association

Religious
Agape Christian Fellowship
BASIC (Christian Fellowship)
Campus Crusade for Christ
Hillel/Jewish Student Union
Hindu Students Council
InterVarsity Christian Fellowship
Korean Christian Fellowship
Muslim Student Association
WOLK

Sports
Alpine Ski and Snowboard
Badminton Club of RIT
Bowling Club
Equestrian Club
Fencing Club
Field Hockey Club
Golf Club
Gymnastics Club
Horizontal Ultimate Frisbee

Kendo Club
Lacrosse
Paintball Club
Pool Club
Roller Hockey
Running Club
Sailing Club
Soccer Club
Tae Kwon Do Club
Tennis Club of RIT
Triathlon Club
Volleyball
Water Polo
Weightlifting Club

Student professional associations

Students also can become involved with departmental and professional associations. This includes groups such as Alpha Chi Sigma (chemistry), Gamma Epsilon Tau (printing), Pi Tau Sigma (mechanical engineering), Beta Alpha Psi (accounting), and Tau Beta Pi (engineering).

A number of national technical associations have student affiliate chapters on campus. These societies play an important part in campus life by bringing together students who have common interests in special subjects. Students should ask their academic departments about organizations for their academic interests.

Reporter magazine

Reporter, RIT's weekly news magazine, is the nation's only full-color weekly college magazine. With a circulation of 6,000, *Reporter* delivers 32 pages of on- and off-campus news, features, entertainment, and sports coverage to the RIT community every Friday. The magazine is completely student-run and staffed, and all editorial, photographic, business, design, and production work is done entirely on campus with the help of the printing application lab's Heidelberg press. A winner of numerous state and national awards, *Reporter* is highly regarded as one of the nation's most innovative college publications and respected for its high-quality writing, photography, illustration, and design. *Reporter* takes pride in its memberships in the Associated Collegiate Press and the American Civil Liberties Union. Students of all educational backgrounds, majors, experience levels, and skills are encouraged to join.

College Activities Board

http://cab.rit.edu
(585) 475-2509 (voice/TTY)

The College Activities Board (CAB) is a student-run organization responsible for providing a balanced program of social and recreational events for the campus community. CAB presents concerts, festivals, movies, and off-campus trips each quarter. For information on CAB programs, stop by the office in the Student Alumni Union or contact us via phone or Internet.

Global Union

www.rit.edu/sg/globalunion
(585) 475-2567

The diversity of RIT's global student body warrants an organization that encourages interaction among different ethnic groups. The Global Union promotes communication, cooperation, and mutual support among all students. It intends to unify all its affiliated organizations and encourage pluralism and understanding. The Global Union provides a platform for expression for campus international and minority communities. It is RIT's multicultural student organization.

Greek Council

http://campuslife.rit.edu/main/fratsorlife/index
(585) 475-7123 (TTY)

The RIT Greek Council is the governing body that represents all members of recognized social fraternal organizations. The council represents the College Panhellenic Association, the Interfraternity Council, the National Pan-Hellenic Council, and GAMMA (Greeks Advocating the Mature Management of Alcohol). Greek Council is responsible for regulating standards and practices that affect the entire fraternal community. It oversees the recognition procedure for special-interest groups that have the intention of becoming a fraternity or sorority. There are also many programs that Greek Council sponsors throughout the year: Greek Weekend, Adopt-a-Highway, Tree of Angels, leadership conferences, social programs, national education speakers, Greek intramural league, and much more.

WITR Radio

http://witr.rit.edu/

WITR is an FM radio station operated by RIT students and licensed by the Federal Communications Commission as a noncommercial, educational station. It is licensed to be on the air 24 hours a day with a power of 910 watts, which covers the Rochester area.

Students make up the staff, working in four major departments: engineering, news and public affairs, programming, and promotions. WITR Radio has been operating for more than 30 years with two major goals: to provide programming to RIT and the surrounding community and to provide a noncommercial training ground for participating staff.

Participation in WITR can be an educational and enriching experience. It offers students practical experience in broadcasting, engineering, and management. WITR disc jockeys gain the qualifications and experience to work at any radio station. Some former and current members now work full or part time at several commercial radio stations, while other members have attained positions with recording studios or are active representatives of record companies such as A&M, MCA, Sony, Mercury, and Polydor.

WITR promotes RIT events and public-service activities, including both on- and off-air participation in many events. It is a major source of local music in the Rochester community. WITR is the primary broadcast source of RIT sports and campus events such as the president's annual address.

NTID Campus Life

NTID Student Congress

nsc.rit.edu/about.php

The NTID Student Congress is an organization comprised of deaf and hard-of-hearing students who represent and provide programs for members of their community. The organization helps interested students communicate their needs, ideas, and concerns about campus life to faculty members, administrators, and other student organizations within RIT; provides opportunities for developing leadership skills; and encourages student activities and integration by providing deaf and hard-of-hearing students with opportunities to interact with their peers socially, academically, athletically, and culturally. Students interested in getting involved may stop in at the NTID Student Congress office in the CSD Student Development Center.

NTID Performing Arts

www.rit.edu/NTID/pa

RIT/NTID Dance Company: The RIT/NTID Dance Company is a unique ensemble of deaf, hard-of-hearing, and hearing students that enriches the educational life of its dancers by providing challenging and rewarding choreographic and performance opportunities. Membership in the company is open to the entire RIT community (dancers as well as nondancers, from every level of ability and experience) at an annual audition in the fall quarter.

The RIT/NTID Dance Company has presented a diverse repertoire consisting of full-length ballets and student and faculty choreography in modern dance, jazz, and a variety of ethnic-based dance. The company also has had guest choreographers and performers, including Garth Fagan, Sahomi Tachibana, Tim Draper, Michael Thomas, Sean McLeod, Carolyn Dorfman, Thomas Warfield, Hong Kong-based choreographer Andy Wong, deaf choreographer Christopher Smith, the Nrityagram Dance Ensemble of India, and Jim Donovan, lead drummer for Rusted Root. For information, contact Thomas Warfield, director of dance, at (585) 475-6252 (voice/TTY) or tfwnvc@rit.edu.

Panara Theatre: Students and faculty produce major plays and performances featuring deaf and hearing actors, dancers, and technical staff. Call the box office at (585) 475-6254 (voice/TTY). For more information, please visit *www.rit.edu/ntid/theater*.

Lab Theater: Lab Theater features experimental, new, or unusual productions. New directors and student writers also use the space for developing their skills. For information, call (585) 475-6250 (voice/TTY).

NTID performing arts course offerings: For information regarding acting, mime, technical theater, lighting, play creating, script translation, or dance classes, call NTID's Performing Arts Program, (585) 475-6250 (voice/TTY).

Literary Series: A joint activity of the RIT Creative Arts Committee, the College of Liberal Arts, and various other campus organizations, the Literary Series brings both well-known and developing writers to campus. Students who wish to participate should call (585) 475-2475 (voice/TTY).

Visiting Artists and Critics Series: Sponsored by the College of Imaging Arts and Sciences, the Creative Arts Program, and the Student Affairs Office, this series features many of the country's leading artists and critics who deal with the issues of technology in art today. For more information, call (585) 475-2646 (voice/TTY).

Student Music Association

www.rit.edu/cla/finearts/music/

RIT Singers: The university-sponsored vocal ensemble, RIT Singers, is composed of 80 to 90 members and is open to students, faculty, and staff. New members are welcome during the first three weeks of each quarter. The ensemble performs classical and popular music and gives one or two concerts each quarter. The RIT Singers also participates in the Western New York Intercollegiate Choral Festival. One credit hour is awarded for participation in the group. For more information, call (585) 475-6087, or e-mail Edward Schell at etsgsh@rit.edu.

Men's A Cappella Ensembles: Selected through auditions, these are ensembles of eight to 12 singers chosen from the RIT Singers. The current groups are Eight-Beat Measure, Brick City Singers, and Surround Sound. Rehearsals for both on- and off-campus appearances are adjusted to fit ensemble members' schedules. For more information, call (585) 475-6087.

Women's A Cappella Ensemble: Selected through auditions, the current group, Encore, is an ensemble of eight to 12 singers chosen from the RIT Singers. Rehearsals for both on- and off-campus appearances are adjusted to fit ensemble members' schedules. For more information, call (585) 475-6087.

Gospel Ensemble: This group of approximately 25 members has developed a repertoire of black spirituals, modern gospel songs, interdenominational anthems, and hymns. The group performs three times a year, during Brick City Festival, their annual Gospel Fest in February, and their annual anniversary concert. During the past few years they have opened for such renowned performers as Richard Smallwood, Vision, and Byron Cage. They perform twice a month for the gospel worship service in the Interfaith Center. For more information, call Campus Life, (585) 475-4483 (voice/TTY).

RIT Orchestra: The RIT Orchestra is open to all RIT students, faculty, staff, and musicians from the surrounding area. The repertoire includes masterworks from the Baroque to the 20th century. Past performances have included pops concerts and chamber music performances. One credit hour is awarded for participation in the group. For more information, call (585) 475-2014, or e-mail Michael Ruhling at mergsl@rit.edu.

RIT Jazz Ensemble: Instrumentalists with a background in jazz will want to check out the RIT Jazz Ensemble. Open to all RIT students, the Jazz Ensemble welcomes those who play the following instruments: saxophone, trumpet, trombone, bass guitar, guitar, piano, and drums. Performing a repertoire of varying styles, the ensemble presents quarterly concerts and performs for campus activities and academic functions. The ensemble rehearses at least once a week, on Tuesday evenings in the SAU music room, 7-10 p.m. One credit hour is awarded for participation in the ensemble. For more information, call (585) 475-5366, or e-mail Jonathan Kruger at jhkgsl@rit.edu.

RIT Concert Band: The Concert Band is open to all RIT students who play traditional band instruments. Performing repertoire of varying styles, the ensemble presents quarterly concerts and performs for campus activities and academic functions. The ensemble rehearses at least once a week, on Wednesday evenings in the SAU

music room, 7-9 p.m. One credit hour is awarded for participation in the band. For more information, call (585) 475-5366 or e-mail Jonathan Kruger at jhkgsl@rit.edu.

RIT World Music Ensemble: The World Music Ensemble is open to all RIT students, faculty, and staff. Repertoire focuses on various non-Western music traditions. The ensemble regularly performs on its extensive collection of handmade African drums. One credit hour is awarded for participation in the ensemble. For more information, call (585) 475-4439 or e-mail Carl Atkins at cjagsh@rit.edu.

Facilities

Academic

Conveniently located five miles from the Greater Rochester International Airport and the New York State Thruway (Interstate 90), the RIT campus is situated in the suburb of Henrietta, only a few minutes from downtown Rochester.

Students, faculty, and staff moved from RIT's original downtown Rochester location to its 1,300-acre suburban campus in 1968. Since then, the campus landscape has undergone significant growth and renewal, including new academic buildings, student apartments and Greek housing, walkways, plantings, and lighting. A 160,000-square-foot field house was completed in 2004. The 73-foot-high steel and bronze sculpture "The Sentinel," by Albert Paley, and a Japanese garden add further interest to a campus that continues to evolve.

In 2009, RIT opened the Center for Student Innovation, a 10,000-square-foot space that serves as a multi-purpose hub where teams of students from all corners of the university can develop and showcase innovative and entrepreneurial projects. Also new on campus is Global Village, a residential and commercial space featuring housing, a courtyard, a convenience shop, restaurants, a bank, a printing and postage center, and a fitness center.

Excellent facilities add to the quality of academic life. RIT is a leader in academic computing, and students work with state-of-the-art computer equipment regardless of their major. Central computer systems can be accessed via a high-speed data network connecting our library, academic facilities, residence hall rooms, and on-campus apartments. *The Princeton Review* has ranked RIT among the most connected campuses in the country. RIT is also among a select group of institutions with access to the Internet 2 research network.

Students also have access to a laser optics laboratory, an observatory, an animal care facility, more than 100 color and black-and-white photography darkrooms, electronic prepress and publishing equipment, ceramic kilns, glass furnaces, a blacksmithing area, a student-operated restaurant, computer graphics and robotic labs, and some of the most up-to-date microelectronic, telecommunications, and computer engineering facilities in the United States.

Park Point

Park Point, a 60-acre residential, retail, and commercial complex featuring a variety of shopping, dining, and housing is located on the northeast corner of campus. The complex features:
- 90,000 square feet of retail space, with more than 25 stores;
- a variety of housing, with occupancy for up to 800 residents;
- a number of theme restaurants;

- Barnes & Noble@RIT, RIT's campus bookstore, which also features a Starbucks location; and
- galleries highlighting arts and crafts by students and faculty.

Global Village

Global Village is a new retail marketplace and housing complex that bears a resemblance to the street-side cafés of Europe. Residential housing features furnished suites, single, and double rooms, community kitchens, free wireless access, free standard cable, free laundry services, and lounges and study rooms.

In addition to housing options, Global Village features:
- *Salsarita's Fresh Mex Cantina*, offering healthy, fresh Mexican favorites
- *Global Grille,* with a menu of rotating international cuisines and recipes from around the world
- *Sushi Station*, offering a variety of fresh-made sushi
- *Global Village Market,* including a vast assortment of ethnic spices, foods, and products from around the world, as well as commonly purchased American items. Hispanic, Asian, Indian, Middle Eastern, Kosher, and Halal foods are among the selections available.
- Heated outdoor seating, a small stage area for concerts and student programming, and a fire pit
- *Better Me Wellness Center*, a state-of-the-art fitness facility featuring a variety of workout equipment and spaces for fitness and wellness classes
- *HUB Print Center and Post Office* services include digital printers; postal services; wide-format printing, mounting, laminating, and coil binding; and a retail section will offer school supplies such as pads, pencils, pens, notebooks, and printer paper for purchase

Student Alumni Union

The Student Alumni Union is designed specifically to service events sponsored by and for the entire campus community. The staff is available to assist and advise various individuals and groups in planning and coordinating their activities. The SAU information desk is located in the main foyer.

The three-level facility is the center of co-curricular activities and features the 500-seat Ingle Auditorium; a complete game room with billiards, foosball, and electronic games; music practice room; a unisex hairstyling and tanning salon; candy counter; a Ben & Jerry's ice cream shop; two separate dining areas (the main cafeteria and the Ritz Sports Zone); meeting rooms; and lounges.

Food service venues

The food service establishments on campus provide a large array of dining choices.

Restaurants and dining halls

Brick City Café: Features full breakfast and lunch entrée menus, as well as an extensive salad bar, subs, wraps, full deli, grill items, display cooking, rotating specialty vendors, fresh soups, desserts, snacks, and a coffee station.

The Café and Market at the Crossroads: Features a market-style food court, convenience store, Starbucks coffee, and café smoothie bar. Specialty items include subs, made-to-order salads, grill items,

made-to-order pasta bar, Jump Asian cuisine, pizzas, calzones, and the Crossbar, featuring rotating international cuisines.

The Commons: Featuring subs, Hettie's Grill, Stone Oven Pizza & Pasta Cucina, made-to-order salads, soups, pasta, and lunch and dinner entrees in a cozy environment with a fireplace. Online delivery orders also available via The Commons' website.

Global Grille at Global Village: Cook-to-order international cuisines prepared on a Mongolian grill using fresh ingredients. Freshly made sushi is also available.

Gracie's Dining Hall: All-you-care-to-eat fare for students, faculty, staff, and guests. Specialty items include Mongo's Grill, offering fresh cook-to-order ingredients, Just Veggie bar, Bonichi Brothers Pizza, Ancho Grill, fresh soups, freshly baked desserts, waffle bar, grill items, and salad bar.

Petals at the RIT Inn and Conference Center: Bistro-style dining offering breakfast, lunch, and dinner menus. Snacks, grab-and-go offerings, and coffee station are also available.

RITZ Sports Zone: Sports restaurant with big-screen HDTVs open for lunch, dinner, and special sporting events. Menu includes flat bread pizzas, wraps, quesadillas, Ancho Grill, panini sandwiches, soups, salads, grill items, subs, rotating international vendors, and desserts. The RITZ also features a bar (21 years old and over only) and game room complete with pool tables and arcade games.

Salsarita's at Global Village: Freshly prepared, made-to-order tacos, burritos, quesadillas, Mexican pizzas, nachos, and salads with fresh ingredients and a variety of salsas and sides.

Markets and Convenience Stores

The Café and Market at the Crossroads: The convenience store carries a selection of grocery items including fruits, snacks, dry goods, international foods, refrigerated and frozen foods, dairy products, beverages, school supplies, and various other common food items.

The Corner Store: Open until 2 a.m. offering a wide range of snacks, beverages, dairy products, dry goods, refrigerated and frozen items, fruits and vegetables, coffee station, DVDs, and gifts. Special-delivery gift and food baskets/packages for birthdays, celebrations, and holidays also available via The Corner Store's website.

Global Village Market: International foods and spices, ready-to-eat ethnic meals, refrigerated and frozen items, fresh fruits and vegetables, cheeses, local, sustainable products, breads, dry goods, snacks, beverages, and coffee station.

Sol's Underground: A large variety of health and beauty products, vitamins and supplements, fresh flowers, housewares, school supplies, greeting cards, gifts and balloons, grocery items, snacks, and international and gourmet packaged food. Sol's Underground also offers flatbread pizzas, quesadillas, paninis, fresh soups, and wraps, as well as Freshens frozen treats.

Express Dining

Artesano Bakery & Café: On-campus bakery offering the best in gourmet tortes, pastries, desserts, organic rolls, breads, bagels, muffins, and scones. Artisan breads, rolls, and baguettes can be purchased par-baked to take home and served deliciously warm. Also features Peets coffee and tea products, including frozen blended drinks, cappuccinos, café lattes, café mochas, and hot chocolate. Freshly made sandwiches and salads are also available.

Beanz: Offers freshly baked gourmet pastries and desserts, bagels, muffins, cookies, fruit, paninis, soups, sandwiches, and salads. Also features Finger Lakes roasted coffee, cappuccinos, espresso, and teas, as well as Sicilian sodas and Freshens Smoothies.

Ben & Jerry's: Ice cream, sundaes, cakes, cookies, real fruit smoothies, and shakes. Catering services also available.

Bytes on the Run: Convenient grab-and-go meals, including freshly made soups and salads, sandwiches, wraps, fresh-baked pizzas, snacks, and beverages.

Ctrl Alt Deli: Design your own sandwich from a selection of wraps, breads, meats, cheeses, veggies, and sauces. Other popular items include chili bread bowls, sizzling cheese sandwiches, traditional flatbread pizzas, quesadillas, hearty soups, baked goods, and cut fresh fruit and salads. Grab-and-go items also available.

The College Grind: Offers a variety of Starbucks' brewed coffee and tea beverages, panini sandwiches, salads, freshly baked goods, cold drinks, and Freshens Smoothies.

Gordie's: Gordie's offers premium fresh and healthy grab-and-go meals, snacks, and drinks and is conveniently located on the Quarter Mile in the Gordon Field House – ideal for grabbing a quick meal on your way to work, class, or before and/or after your workout.

Campus stores

Barnes & Noble @ RIT—The official college bookstore, Barnes & Noble @RIT is located at Park Point. The 40,000-square-foot store features educational textbooks for all of RIT's courses, 60,000 titles, and RIT-related merchandise. The store offers wireless access, a Starbucks Café, and regular shuttle service to and from campus.

Digital Den—Located in the Student Alumni Union, the Digital Den offers a wide array of merchandise, including computer equipment, hardware and software, iPods, and photography equipment and accessories. The store is staffed with knowledgeable personnel who can offer guidance on equipment and purchases.

Student conduct

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. Members of the campus community, including students, trustees, faculty, staff, and administrators, have adopted an honor code to:

- demonstrate civility, respect, decency, and sensitivity toward our fellow RIT community members, recognizing that all individuals at this university are part of the larger RIT family and as such are entitled to support and respect.
- 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.

Summary of conduct policies

The following broad areas of conduct for students, although not all-inclusive, indicate, in general terms, the standards of student conduct that are important to the educational mission of RIT and the quality of campus life. The RIT conduct code and disciplinary processes are printed in their entirety in The Student Rights and Responsibilities Handbook. All policies and procedures relating to student and organization conduct are printed in this document and should be reviewed by all RIT students.

Human rights and dignity: Students are expected to follow RIT's policy prohibiting discrimination and harassment. All students should practice high regard for the rights and dignity of other people, preventing all types of discrimination. RIT attempts to resolve conflicts between individuals and groups with differing backgrounds and views through discussion and clarification of values and attitudes. Students should not physically or verbally abuse any person on RIT premises or at RIT-sponsored or supervised events.

Computer use: Students are expected to follow RIT's code of conduct for computer and network use. A variety of computing resources are available at RIT, ranging from application-specific microcomputers to central multiuser systems. Computer abuse is expensive and can have far-reaching consequences. Students should not intentionally disrupt the educational process through deletion of another's course assignment, dampen the creative process through theft of intellectual property, violate an individual's privacy or institutional confidentiality or infringe on copyright.

Off-campus conduct: The conduct of RIT students off campus will be held to the same standards and policies as on campus. Any off-campus action that interferes with the completion of the educational mission of RIT or any member of the RIT community is subject to disciplinary action.

Academic honesty: Students are expected to follow RIT's policy on academic dishonesty. Students should not engage, or allow others to engage, in any form of academic dishonesty. These acts include, but are not limited to, plagiarism in any form or using information and materials not authorized by the instructor during an examination. Dishonesty also includes furnishing false information to RIT and forgery. Alteration or use of RIT documents or instruments of identification with intent to defraud are prohibited.

Disruption of RIT activities: Students should refrain from unreasonable disruption or obstruction of teaching, research, administration, organizational activities, disciplinary proceedings, or any other RIT activities.

Parking and traffic: All drivers on campus should follow RIT's parking and traffic regulations. New York state motor vehicle and traffic laws are in effect on campus. RIT may enact supplemental parking and traffic regulations for RIT-owned properties. The regulations are intended to promote order and ease of movement of pedestrians and motorists and to safeguard people and property.

Regard for property: Students are expected to exercise appropriate care for RIT property and the property of others. Theft, damage, or unauthorized possession of either RIT property or the property of a member of the academic community on RIT premises is subject to disciplinary action.

Library materials and laboratory facilities are of utmost importance to the completion of RIT's academic mission. Consequently, students should show considerable care in the handling of these items.

RIT officials: Students must furnish proof of enrollment through a valid student identification card upon request from RIT officials. Students should comply with the directions or instructions of RIT officials acting in performance of their duties.

Safety: Safety is an issue all students should care about deeply—not only the safety of themselves, but the safety of others. Students should behave sensibly to protect the welfare of others and minimize hazardous situations. Safety is of critical importance at all places on the campus, but particularly important in the apartments and residence halls, where the carelessness of one individual can affect the lives of hundreds. Willful violations of safety, such as causing false fire alarms, will result in immediate disciplinary action according to judicial procedures.

Sexual harassment/misconduct: RIT acknowledges that an individual student's sexual attitudes and values are a matter of choice. Nonetheless, responsible sexual behaviors must take into account the dignity, privacy, and rights of others. RIT's policy prohibiting discrimination and harassment and the RIT sexual assault policy should be observed at all times. Moreover, no individual should be subjected to exploitative actions.

Study environment: Students need a campus environment that is conducive to studying, especially in facilities designed primarily for study. Individuals should respect the rights of others to study and should be understanding of different study habits.

Student-sponsored events: In the planning and scheduling of events, students should consider the safety and overall welfare of members of the academic community. Students should not knowingly conduct events that might inhibit the completion of the academic mission of the university or any member thereof.

Student alcohol and drug policy

RIT is a learning community. The best environment for learning occurs when the community promotes and supports healthy and responsible behavior among its members. Students ultimately are responsible for their behavior and must assume full consequences for it. This includes the responsible and legal use of alcohol. The goal of RIT's student alcohol and drug policy is to promote individual responsibility and advance the goals and expectations stated in the previous section, "Expectations for Community Behavior."

This policy applies to all student members of the RIT community and their guests. It also applies to all student activities on the RIT campus and to all RIT-sponsored events where students are present. Faculty, staff, and their guests are governed by a separate policy.

RIT students are subject to federal, state, and local laws regarding alcohol and drug use. Serious civil and criminal legal liabilities can result from possessing, using, serving, selling, or unlawfully manufacturing drugs/alcohol. RIT will not protect individuals or groups from law enforcement by legal authorities with respect to drugs and alcohol use or abuse.

Individuals or organizations who hold private parties or sponsor private events where alcohol is served or consumed assume full personal responsibility and liability for compliance with the law and conduct related to the consumption of alcohol by attendees, participants, and guests. Officers of organizations that sponsor parties or events, or other hosts or people whose apartment, residence hall room, or office is the site where drinking occurs, will be held responsible for complying with the provisions of this policy.

Provisions governing the possession and use of alcohol

- Alcohol may not be illegally used, possessed, manufactured, or exchanged on RIT-owned or -operated property or at RIT-sponsored events. No alcohol may be sold or exchanged for money on RIT property or at RIT-sponsored events without a New York state liquor license. The RITskeller is a licensed premise and is permitted to serve alcohol to individuals who are at least 21 years of age.
- The consumption or possession of alcoholic beverages is prohibited in all RIT residence halls (including Greek houses and house basements), regardless of age or circumstances.
- The consumption or possession of alcoholic beverages is permitted in RIT-operated apartments only by those residents of the apartment who are at least 21 years of age. Alcohol possession and consumption is not permitted in common or public areas within apartment complexes. Parties in apartments are to be limited to invited guests of a number that is defined by building occupancy codes and can be accommodated without disturbing the community. These numbers may be found in the RIT apartment contract for a particular facility or obtained from apartment management.
- Guests at all privately sponsored parties where alcohol is to be served must be invited by direct personal invitation only. General "come all" posters, flyers, or mass electronic invitations will not be permitted for events designated as private parties. Only the RITskeller or an institutionally designated space can be used for a communitywide event where alcohol is to be served to students or student groups.

- Public Safety and other RIT officials have the right to terminate events and take appropriate action if they determine that it is probable that university policy and/or New York state law is being violated at any gathering on the RIT campus, in RIT-operated facilities, or at campus-sponsored functions.
- Bulk containers of beer (kegs or beer balls) are prohibited in all RIT-operated apartments. Such containers are permitted only in institutionally designated party areas where alcohol can be served for parties or special events, or in areas that are covered by a New York state liquor license.
- Open containers of alcohol are not permitted outdoors on the RIT campus without prior authorization. Authorization will be given in situations where alcohol is to be served in conjunction with an officially sponsored RIT student event. The authorization process for use of alcohol in these situations is coordinated through the Center for Campus Life in the Student Alumni Union. (See "Registration Procedures for Events Where Alcohol Is Served/Consumed on the RIT Campus" for specifics**.**)
- All student events and parties where alcohol is served, possessed, or consumed must abide by all existing university policies and procedures regarding the use, possession, sale, and distribution of alcohol, and may be restricted further by existing municipal and state ordinances. Prior to planning any activity or event where alcohol is to be served, individuals/groups should consult the Center for Campus Life, located in the Student Alumni Union, regarding the provisions and restrictions governing alcohol use at RIT activities and events.
- Student-sponsored parties/events where alcohol is served may be held in designated areas on the RIT campus. (Private parties held in RIT-operated apartments are covered in item No. 3.) Alcoholic beverages can be served at these student-sponsored parties and events on campus only by RIT Food Service or by an approved third-party vendor. Registration and authorization for such events can be obtained through the Center for Campus Life. The center coordinates the procedures for securing authorization from the State Liquor Board to sell/serve alcohol; this process takes a minimum of 10 business days.
- Behavior that is dangerous to oneself or others and/or disturbs the learning and/or living environment in RIT-operated facilities or at any RIT-sponsored activity/event is strictly prohibited. Such behavior will result in Public Safety intervention and campus judicial action.
- Serving, selling, or providing alcohol to those under 21 years of age or possession of alcohol by someone under 21 years of age is prohibited by both New York state law and RIT regulations. Any person who exhibits behavior that suggests excessive drinking has occurred cannot be served or permitted continued access to alcohol. Individuals who serve such individuals alcoholic beverages will face Public Safety intervention, campus judicial action, and possible civil and criminal prosecution.
- Use of false or altered identification or other misrepresentation of one's age in order to possess or consume alcohol is explicitly forbidden.
- In order to avoid the dangerous and possibly fatal effects of alcohol poisoning, an individual who has "passed out" or shows other signs of serious effects from alcohol consumption should immediately be brought to the attention of Public Safety, RIT Ambulance, the Residence Life staff, or some other person able to assist or get assistance. Seeking such help is encouraged by RIT.

- Students violating the RIT Student Alcohol and Drug Policy will be subject to the campus judicial process published in the Student Rights and Responsibilities Handbook, as well as the judicial actions and sanctions described in this policy. All guests or visitors to the campus also must comply with the provisions of this policy or risk removal from the campus and possible future restriction from campus property.

Sanctions regarding violations of RIT student alcohol policy

If a student or student organization violates the RIT alcohol policy, the following judicial outcomes should be anticipated:

BEHAVIOR	CONSEQUENCES
Possession of alcohol • In residence halls and Greek houses regardless of age • Under 21 years of age • Possession of bulk alcohol	First offense: Disciplinary probation Second offense: Deferred disciplinary suspension/deferred removal from housing and possible referral for a chemical dependency screening Third offense: Disciplinary suspension or removal from housing, with appropriate conditions
Behavior that suggests the excessive consumption of alcohol	First offense: Probable deferred disciplinary suspension/deferred removal from housing; possible referral to alternative educational sanction program or a chemical dependency screening Second offense: Disciplinary suspension and/or removal from housing, with appropriate conditions
Serious policy violations (including serving alcohol to minors, hazing events involving alcohol, or dangerous behavior as a result of alcohol)	First offense: Probable disciplinary suspension and/or removal from housing, with appropriate conditions
DWI on campus	First offense: Referral to local law enforcement agency and disciplinary suspension
Student organizational violations related to alcohol	First offense: Educational/community related sanctions; possible disciplinary suspension of organization and/or removal of recognition

These guidelines are examples of responses that will most likely result when there have been violations of the RIT alcohol policy. Each incident is handled individually. The prior judicial background of the student(s) involved and the impact of the incident on the student and the RIT community are considered when decisions are rendered. In some cases, even with first offenses, the impact of an incident may call for a more serious response. A sanction of deferred suspension or higher will require the dependent student to notify his or her parents or legal guardians about the decision and have the parents/legal guardians contact the Center for Student Conduct and Conflict Management Services for verification.

Registration procedures for student-sponsored events where alcohol is served/consumed on the RIT campus

The following procedures do not apply to private parties held in RIT-operated apartments.

- Student-sponsored events where alcoholic beverages are to be served require that an event registration form be initiated and approved. This process takes a minimum of 10 business days prior to the event. Such events can be arranged on a space-available basis. Inquiries regarding the availability of space/rooms for events where alcohol is permitted can be obtained at the Center for Campus Life.
- Alcohol can be provided, possessed, or consumed by students only in institutionally designated spaces on the RIT campus. RIT Food Service or an approved third-party vendor must dispense all alcohol at these parties/events. Arrangements for private parties where alcoholic beverages are served can be made through the Center for Campus Life. Only individuals who are at least 21 years of age may register an event where alcoholic beverages are to be served.
- Public Safety will determine the security staffing levels for each event where alcoholic beverages are to be served. The required number of officers must be present for the duration of the event. The costs of these officers will be billed directly to the sponsoring/host organization. Public Safety will discuss requirements for security with the sponsoring individuals or groups prior to the event.
- The guests at all privately sponsored parties where alcoholic beverages are to be served must be invited by direct personal invitation only. General "come all" posters, flyers, or mass electronic invitations will not be permitted for events designated as private parties. Only the RITskeller or an institutionally designated space can be used for a communitywide event where alcoholic beverages are to be served to students or student groups.
- When alcoholic beverages are served at student-sponsored parties/events, nonalcoholic beverages and food also must be served. Guidelines may be obtained at the Center for Campus Life.
- Individuals/officers of the student organization sponsoring the event will be held responsible for the behavior of guests. An officer of the organization must be present for the duration of the event. The organization officer is also responsible for assuring that only individuals who are at least 21 years of age are consuming alcohol during the party/event.
- Student organizers of a party/event should ensure that appropriate transportation is available for individuals who have been consuming alcohol during the party. They should ensure that individuals who have been drinking do not drive while intoxicated.

Provisions governing the possession and use of illegal drugs

- RIT explicitly prohibits the use, possession, sale, manufacture, or trafficking of illegal drugs on RIT-owned or -operated property, or at RIT-sponsored events.
- In order to avoid the dangerous and possibly fatal effects of drug overdose, an individual who has "passed out" or shows other signs of serious effects from drug use should immediately be brought to the attention of Public Safety, RIT Ambulance, the Residence Life staff, or some other person able to assist or to get assistance. Seeking such help is encouraged by RIT.
- Students violating the RIT student alcohol and drug policy will be subject to the campus judicial process, published in the Student Rights and Responsibilities Handbook, and the judicial actions and sanctions described in this policy. RIT students will be held responsible for the behavior of their guests. All guests or visitors to the campus also must comply with the provisions of this policy or risk removal from the campus and possible future restriction from campus property.

Sanctions Regarding Violations of RIT Student Drug Policy

If a student or student organization violates the RIT drug policy, the following judicial outcomes should be anticipated:

BEHAVIOR	CONSEQUENCES
Use/possession of illegal drugs	First Offense: Deferred disciplinary suspension; deferred removal or removal from RIT housing; possible referral for a chemical dependency screening and alternative education program Second Offense: Disciplinary suspension or dismissal; drug treatment while on suspension from the university
Selling or trafficking of illegal drugs	Disciplinary suspension, dismissal or expulsion; referral to local law enforcement agencies

These guidelines are examples of responses that will most likely result when there have been violations of the RIT drug policy. Each incident is handled individually. The prior judicial background of the student(s) involved and the impact of the incident on the student and the RIT community are considered when decisions are rendered. In some cases, even though it may be a first offense, the impact of an incident may call for a more serious response. A sanction of deferred suspension or higher will require the dependent student to notify his/her parents or legal guardians about the decision and have the parents or legal guardians contact the Center for Student Conduct and Conflict Management Services for verification.

RIT process for student misconduct

RIT has established well-defined processes for handling student misconduct cases while protecting the civil and academic rights of all members of the RIT community. Student conduct and appeals processes are administered through the Center for Student Conduct and Conflict Management Services. Sanctions imposed upon those found responsible for violating the RIT conduct code may range from a written warning to restitution to disciplinary suspension, dismissal, and expulsion from the university. Students suspended from RIT may not enroll in any course until such time as the suspension is waived by the Center for Student Conduct and Conflict Management Services.

RIT Conflict Management Services

Students involved in a dispute may utilize RIT Conflict Management Services. Mediation is a process by which students, organizations, faculty, or staff voluntarily meet with trained mediators to discuss ways in which problems or differences can be resolved.

Undergraduate Admission

www.rit.edu/admission

Freshman admission

Students applying for freshman admission for the fall quarter (September) may apply through an **Early Decision Plan** or **Regular Decision Plan.** The Early Decision Plan is designed for those who consider RIT their first-choice college and wish to receive an early notification regarding admission. Early Decision requires that candidates file their applications and all supporting documents by December 1 in order to receive admission notification by January 15.

Freshmen who choose not to apply for Early Decision are considered under our Regular Decision Plan. Regular Decision applicants who have provided all required application materials by February 1 will receive admission notification by March 15. Applications received after February 1 will be reviewed on a space-available basis, with notification letters mailed four to six weeks after the application is completed.

All applications for winter, spring, or summer quarter 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.

Transfer admission

Applications for transfer admission are reviewed as they are received, and notification letters are mailed four to six weeks after the application is completed. 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 programs, 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 90 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 the scale below.

YEAR LEVEL	1-4-YEAR PROGRAMS	5-YEAR PROGRAMS
1	0-39	0-39
2	40-83	40-83
3	84-127	84-113
4	128-above	114-143
5		144-above

Specific instructions for completing the application process are contained in the application packet (also online). 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, competitiveness of high school or previous college, 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 $300 nonrefundable enrollment deposit reserves a place in your class and is credited to your first-quarter 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 Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) examination along with the requirements listed below. International applicants applying for fall quarter (September) admission should have all educational records and admission materials on file by March 1. Applications are reviewed on a "rolling" basis, with admissions notification four to six weeks after all materials are received by RIT.

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 $50 application fee;

3. An official high school transcript for all freshman applicants and transfer students with fewer than 30 semester hours or 45 quarter hours completed at the time of application;

4. Official American College Test (ACT) or Scholastic Reasoning Test (SAT-I) results for all freshman applicants;

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 programs offered by RIT's School of Art, School of Design, and School for American Crafts. Please review the portfolio guidelines available at admissions. rit.edu/applyonline.php3 before submitting your portfolio.

Early admission: Students who complete the prescribed number and distribution of high school units in three years, with the exception of fourth-year English/history, may seek admission under an Early Admission Program. Please contact the Undergraduate Admissions Office for details.

Placement testing for admitted students: Many programs 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 has developed a Mathematics Placement Exam. This exam is taken by all entering students whose programs require a calculus sequence. It assesses students' mastery of some of the fundamental mathematical concepts they have seen in their high school mathematics courses. Students without a calculus sequence who are not sure about the appropriate mathematics course with which to begin their studies at RIT may contact the department of mathematics and statistics at (585) 475-5780 to arrange for a special mathematics diagnostic test.

The Liberal Arts Qualifying Exam (LAQE) is a placement test for which students are asked to write an essay on an assigned topic. The purpose of the exam is to determine whether students should be registered for the required Writing Seminar course, or must first take the Basic Writing course. **The LAQE is a placement test required of all first-year students who do not meet one of the following criteria: a score of 560 or higher on the verbal section of the SAT, a score of 23 or higher on the English portion of the ACT, or a score of 6 or higher on the SAT essay exam.**

New York State immunization requirement: New York State Public Law 2165 requires that all matriculated students enrolled for more than 6 quarter 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 interview and campus tour may be scheduled by contacting the Undergraduate Admissions Office via our website, admissions.rit.edu, 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 NTID Office of Admissions by sending an e-mail to www.ntid.rit.edu or calling (585) 475-6700 (voice/TTY). Office hours are Monday through Friday, 8:30 a.m. to 4:30 p.m. EST.

Part-time enrollment services: The Office of Part-time Enrollment Services provides central information and counseling services to students interested in enrolling in part-time undergraduate studies offered through RIT's various schools and colleges. Contact the office if assistance is needed in selecting an academic program, exploring financial aid opportunities, registering for classes, or receiving information about any aspect of part-time study at RIT.

Staff members are available to assist you from 8:30 a.m. to 6 p.m., Monday through Thursday, and from 8:30 a.m. to 4:30 p.m. on Friday. We invite you to visit our website at www.rit.edu/parttime, call (585) 475-2229 for information, or visit our office on the lower level of the Bausch & Lomb Center on campus.

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 the Audiological Record Form or submit an audiogram without the form. All audiograms must be unaided and have been completed within three years of the application date. This form 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 freshman 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. 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.

Freshman Admission Guidelines

COLLEGE OF APPLIED AND SCIENCE AND TECHNOLOGY	
Academic Programs	**High School Preparation Required[1]**
Engineering Technology: Civil, Computer, Electrical, Electrical/Mechanical, Manufacturing, Mechanical, and Telecommunications Engineering Technology programs; Undeclared Option[2]	Algebra, geometry, trigonometry, and two years of science (including physics or chemistry) required; pre-calculus and technology courses desirable
Environmental Sustainability, Health and Safety	Three years of mathematics (including trigonometry) and two years of science (including physics or chemistry)
School of International Hospitality and Service Innovation: International Hospitality and Service Management	College preparatory program, including algebra, geometry, and two years of science
Packaging Science	Algebra, geometry, trigonometry, and two years of science required

E. PHILIP SAUNDERS COLLEGE OF BUSINESS	
Academic Programs	**High School Preparation Required[1]**
Accounting, Finance, International Business, Management, Management Information Systems, Marketing, New Media Marketing, Undeclared Business Option[2]	College preparatory program including algebra, geometry, and two years of science; trigonometry or precalculus, and courses emphasizing writing skills also desirable

B. THOMAS GOLISANO COLLEGE OF COMPUTING AND INFORMATION SCIENCES	
Academic Programs	**High School Preparation Required[1]**
Applied Networking and System Administration, Information Security and Forensics	Algebra, geometry, and two years of science required; physics, chemistry, computing, precalculus, and technology courses recommended

Computer Science	Algebra, geometry, trigonometry, and two years of science (including physics or chemistry) required; precalculus recommended
Information Technology, New Media Interactive Development, Game Design and Development	Algebra, geometry, and two years of science required; trigonometry/pre-calculus and technology courses desirable
Medical Informatics	Algebra, geometry, trigonometry, biology, and chemistry required
Software Engineering	Algebra, geometry, trigonometry, and two years of science (including physics or chemistry) required; precalculus recommended
Computing Exploration, Informatics Exploration[2]	Algebra, geometry, trigonometry, and two years of science (including physics or chemistry) required; precalculus recommended

KATE GLEASON COLLEGE OF ENGINEERING

Academic Programs	High School Preparation Required[1]
Biomedical, Chemical, Computer, Computer/Software, Electrical, Electrical/Biomedical, Electrical/Computer, Electrical/Robotics, Industrial, Industrial/Ergonomics, Industrial/Information Systems, Industrial/Lean Six Sigma, Industrial/Manufacturing, Industrial/Six Sigma, Mechanical, Mechanical/Aerospace, Mechanical/Automotive, Mechanical/ Bioengineering, Mechanical/Energy and Environment, and Microelectronic Engineering programs; Engineering Exploration Program[2]	Four years of mathematics required (algebra, geometry, trigonometry, and precalculus); physics and chemistry required for all programs, biology also required for biomedical and electrical/biomedical engineering option

COLLEGE OF HEALTH SCIENCES AND TECHNOLOGY

Academic Programs	High School Preparation Required[1]
Biomedical Sciences, Diagnostic Medical Sonography (Ultrasound), Physician Assistant	Algebra, geometry, trigonometry, and biology required for all programs; chemistry or physics required for Ultrasound program, and chemistry required for Biomedical Sciences and Physician Assistant programs; precalculus recommended.
Nutrition Management	College preparatory program, including algebra, geometry, and two years of science; chemistry required
General Science Exploration[2], Premedical Studies	Algebra, geometry, trigonometry, and two years of science required; physics, chemistry, and precalculus recommended

COLLEGE OF IMAGING ARTS AND SCIENCES

Academic Programs	High School Preparation Required[1]
School of Art: Fine Arts Studio, Illustration, Medical Illustration, Undeclared Art Option[2] **School of Design:** 3D Digital Graphics, Graphic Design, Industrial Design, Interior Design, New Media Design and Imaging, Undeclared Design Option[2] **School for American Crafts:** Ceramics/Ceramic Sculpture, Glass, Metalcrafts and Jewelry, Woodworking/Furniture Design, Undeclared Crafts Option[2]	Studio art experience, in addition to a balanced academic program with courses in English, social studies, mathematics, and science, is required. Mechanical drawing also is desirable for Industrial or Interior Design applicants. Medical Illustration program requires two years of science (biology preferred). A portfolio of original artwork is required for all programs, with drawing skills being most important. Craft students should also show examples of work in their area of interest, if possible.
School of Film and Animation: Film and Animation, Motion Picture Science (formerly Digital Cinema)	College preparatory program, including two years of mathematics and two years of science. Motion Picture Science requires trigonometry and chemistry or physics; precalculus is recommended.

School of Photographic Arts and Sciences: Biomedical Photographic Communications, Imaging and Photographic Technology, Professional Photographic Illustration/Advertising Photography Option, Professional Photographic Illustration/Fine Art Photography Option, Professional Photographic Illustration/Photojournalism Option, Visual Media	College preparatory program, including two years of mathematics and two years of science; biology required for Biomedical Photographic Communications
School of Print Media: Media Arts and Technology (formerly New Media Publishing)	Algebra, geometry, trigonometry, and two years of science (physics or chemistry required)

COLLEGE OF LIBERAL ARTS

Academic Programs	High School Preparation Required[1]
Advertising and Public Relations, Criminal Justice, Economics, International Studies, Journalism, Museum Studies, Philosophy, Political Science, Professional and Technical Communication, Psychology, Public Policy, Urban and Community Studies, Liberal Arts Exploration[2]	College preparatory program, including algebra, geometry, and two years of science required; trigonometry also required for Public Policy.

CENTER FOR MULTIDISCIPLINARY STUDIES

Academic Programs	High School Preparation Required[1]
Applied Arts and Science (transfer only)	Freshmen should apply to the University Studies Program[3]

NATIONAL TECHNICAL INSTITUTE FOR THE DEAF

Academic Programs	High School Preparation Required[1]
Accounting Technology, Administrative Support Technology, Applied Computer Technology, Applied Liberal Arts, Applied Mechanical Technology, Arts and Imaging Studies, ASL-English Interpretation, Business, Business Technology, Computer-Aided Drafting Technology, Computer-Integrated Machining Technology, Hospitality and Service Management, Laboratory Science Technology, Pre-baccalaureate Studies	General college preparatory courses in science, mathematics, and English; see program descriptions for specific requirements or contact NTID Office of Admissions, (585) 475-6700 (voice/TTY), toll free in the U.S. and Canada at (866) 644-6843 (voice/TTY), or by videophone at (585) 743-1366.

COLLEGE OF SCIENCE

Academic Programs	High School Preparation Required[1]
School of Biological and Medical Sciences: Bioinformatics, Biology, Molecular Bioscience and Biotechnology (formerly Biotechnology), Molecular Bioscience and Biotechnology – Bioinformatics Option	Algebra, geometry, trigonometry, biology, and chemistry required; precalculus recommended
Environmental Science	Algebra, geometry, trigonometry, biology, and chemistry required; precalculus recommended
School of Mathematical Sciences: Applied Mathematics, Applied Statistics, Computational Mathematics	Algebra, geometry, trigonometry, and two years of science required; precalculus recommended
Department of Chemistry: Biochemistry, Chemistry	Algebra, geometry, trigonometry, and chemistry required; physics and precalculus recommended
Department of Physics: Physics	Algebra, geometry, trigonometry, physics or chemistry required; precalculus recommended
Center for Imaging Science: Imaging Science	Algebra, geometry, trigonometry, and chemistry or physics required; precalculus recommended
General Science Exploration[2], Premedical Studies	Algebra, geometry, trigonometry, and two years of science required; physics, chemistry, and precalculus recommended

1 Students attending high schools in New York state should note that algebra, geometry, and trigonometry are the equivalent of Mathematics Course I, II and III.

2 A one-year program for students wishing to explore alternatives before selecting a specific degree program within this RIT college or school.

3 A one-year program for students who are undecided on a major and wish to explore program options in one or more of RIT's colleges.

Transfer Admission Guidelines

COLLEGE OF APPLIED SCIENCE AND TECHNOLOGY

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
School of Engineering Technology: Civil Engineering Technology	1	Fall preferred	Civil, Construction, Environmental, Architectural, Transportation or Surveying Technology; Engineering Science	Courses in mathematics, science, and engineering technology
Computer Engineering Technology	1	Fall preferred	Computer Technology, Electrical or Electronic Technology, or Computer Science	Courses in computer science, math, science, and engineering technology
Electrical Engineering Technology	1	Fall preferred	Electrical Technology, Electronic Technology, Engineering Science	Courses in mathematics, science, and engineering technology
Electrical/Mechanical Engineering Technology	1	Fall preferred	Electrical or Mechanical Technology, Electronic Technology, Engineering Science	Courses in mathematics, science, and engineering technology
Manufacturing Engineering Technology	1	Fall preferred	Manufacturing, Mechanical, Drafting and Design, Robotics, or Electromechanical Technology; Engineering Science	Courses in mathematics, science, and engineering technology
Mechanical Engineering Technology	1	Fall preferred	Mechanical, Design and Drafting, Air Conditioning, or Electromechanical Technology; Engineering Science	Courses in mathematics, science, and technology
Telecommunications Engineering Technology	1	Fall preferred	Telecommunications, Electrical or Electronic Technology; Engineering Science	Courses in mathematics, science, and technology
Environmental Sustainability, Health and Safety	1	Any quarter	Biology, Chemistry, or Environmental Sciences; Business or Public Administration; Liberal Arts with math/science	Math through Calculus I, micro- and macroeconomics, introductory courses in biology, chemistry, and physics
School of International Hospitality and Service Innovation: International Hospitality and Service Management	1	Any quarter	Foodservice Management, Hotel/Resort Management, Travel/Tourism Management, Agriculture, Technology, Business, or Liberal Arts	Courses in business and economics, a foreign language, math, science, and liberal arts
Packaging Science: Management Option, Printing Option, Technical Option	1	Any quarter	Business Administration, Marketing, Management, Graphic Arts, Engineering Science, Liberal Arts with math/science	Courses in business, athematics, science, the liberal arts, and statistics or computer science

E. PHILIP SAUNDERS COLLEGE OF BUSINESS

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Accounting	1	Any quarter	Accounting or AS degree in Business Administration	Courses in economics, accounting, the liberal arts, science, and mathematics
Finance, International Business, Management, Marketing, New Media Marketing	1	Any quarter	Business Administration or Liberal Arts	Courses in economics, the liberal arts, science, and mathematics
Management Information Systems	1	Any quarter	Data Processing/Management Information Systems, or AS in Business Administration	Courses in the liberal arts, math, science, economics, and computer science

B. THOMAS GOLISANO COLLEGE OF COMPUTING AND INFORMATION SCIENCES

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Computer Science Software Engineering	1	Fall preferred	Computer Science, Engineering Science	Courses in computer science, calculus, the liberal arts, and calculus-based physics, chemistry, or biology
School of Informatics: Applied Networking and System Administration, Information Security and Forensics, Information Technology, Medical Informatics **School of Interactive Games and Media:** Game Design and Development, New Media Interactive Development	1	Any quarter (fall preferred for New Media/Interactive Development)	Computer Applications, Computer Science, Information Technology	Courses in programming, computer applications, calculus, lab sciences, and the liberal arts

KATE GLEASON COLLEGE OF ENGINEERING

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Biomedical Engineering, Chemical Engineering, Computer Engineering, Electrical Engineering, Industrial Engineering, Mechanical Engineering, Microelectronic Engineering	1	Fall preferred	Engineering Science (plus computer science electives for computer engineering applicants)	Pre-engineering courses such as calculus, calculus-based physics, chemistry, and the liberal arts; computer science courses for Computer Engineering applicants

COLLEGE OF HEALTH SCIENCES AND TECHNOLOGY

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Biomedical Sciences	2	Fall preferred	Liberal Arts with science option; Allied Health; Radiologic Technology	Courses in the liberal arts, sciences, and math
Diagnostic Medical Sonography (Ultrasound)	3	Fall preferred	Liberal Arts with science option; Allied Health; Radiologic Technology	Courses in the liberal arts, sciences, and math
Nutrition Management	1	Any quarter	Dietetics or Nutrition, Foodservice Management, or Liberal Arts	Courses in the liberal arts, sciences, and math
Physician Assistant	3	Fall only	Liberal Arts with science option; Allied Health areas	Courses in the liberal arts, sciences, and math

COLLEGE OF IMAGING ARTS AND SCIENCES

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
School of Art: Fine Arts Studio, Illustration, Medical Illustration **School of Design:** 3D Digital Graphics, Graphic Design, Industrial Design, Interior Design, New Media Design and Imaging	4	Fall preferred	Related programs or studio art experience in desired disciplines	Courses in studio art, art history, and the liberal arts; portfolio of original artwork required
Transfer Adjustment: All art and design programs		Summer only		Summer courses can lead to third-year status
School for American Crafts: Ceramics/ Ceramic Sculpture, Glass, Metalcrafts and Jewelry, Woodworking/Furniture Design	4	Fall preferred	Transfer as a third-year student is uncommon as comparable programs are not generally available at other colleges.	Courses in art history, studio art, and the liberal arts; portfolio of original artwork required
School of Film and Animation: Film and Animation	2	Fall only	No common program available	Courses in the liberal arts; science; design; drawing; and film, video, or animation
Motion Picture Science (formerly Digital Cinema)	2	Fall only	No common program available	Courses in calculus or higher mathematics, college chemistry, calculus-based physics, and the liberal arts
School of Photographic Arts and Sciences: Biomedical Photographic Communications	3	Fall preferred	No common program available	Courses in biology, photography, and the liberal arts; portfolio required for photo credit
Imaging and Photographic Technology	1	Fall preferred	No common program available	Courses in college physics, mathematics, photography, and the liberal arts; portfolio required for photo credit
Professional Photographic Illustration: Advertising Photography Option, Fine Art Photography Option, Photojournalism Option; Visual Media	4	Fall preferred	Applied Photography	Courses in the liberal arts, photography, design, and art history; portfolio required for photo transfer credit
Transfer adjustment: Available in all photography programs		Summer only	Transfer adjustment leading to second- or third-year status in most programs	
School of Print Media: Media Arts and Technology (formerly New Media Publishing)	1	No summer entry	Transfer from associate degree programs considered on an individual basis	Courses in the liberal arts, college math, physics and chemistry, and business

COLLEGE OF LIBERAL ARTS

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Advertising and Public Relations	1	Any quarter	Liberal Arts, Business, Communication, Advertising, Public Relations	The liberal arts, business, communication, advertising, and public relations
Criminal Justice	2 or 3	Any quarter	Criminal Justice, Human Services, or Liberal Arts	Courses in criminal justice or related areas, the liberal arts, math, and science
Economics	2	Any quarter	Business Administration or Liberal Arts	Courses in business, the liberal arts, math, science, and computer science
International Studies	2	Any quarter	Liberal Arts with social sciences, science, languages	Courses in the liberal arts, social sciences, sciences, and languages
Journalism	1	Any quarter	Liberal Arts with social sciences	Courses in the liberal arts, social sciences, sciences, and languages
Museum Studies	4	Any quarter	Fine Arts, liberal Arts, Business/Marketing	Courses in the liberal arts, art history, studio arts, photography, business, and chemistry

Philosophy	4	Any quarter	Liberal Arts	Courses in the liberal arts, math, science, philosophy, and ethics
Political Science	4	Any quarter	Liberal Arts with social sciences, sciences, or languages	Courses in the liberal arts, science, foreign language, and history
Professional and Technical Communication	1	Any quarter	Liberal Arts with emphasis in communication and a technical field such as business, photography	Courses in the liberal arts, math, science, and computer science
Psychology	1 or 3	Any quarter	Liberal Arts with science or social sciences	Courses in the liberal arts, sciences, and social sciences
Public Policy	1	Any quarter	Liberal Arts, Environmental Studies, Economics, Government, Science	Courses in the liberal arts, sciences, and social sciences
Urban and Community Studies	1 or 3	Any quarter	Liberal Arts, Environmental Studies, Economics, Government, Science	Courses in the liberal arts, sciences, and social sciences

CENTER FOR MULTIDISCIPLINARY STUDIES

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Applied Arts and Science	2	Any quarter	Transfer from associate degree programs considered on individual basis.	Courses in the liberal arts, sciences, and math

NATIONAL TECHNICAL INSTITUTE FOR THE DEAF

Program at RIT	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Accounting Technology, Administrative Support Technology, Applied Computer Technology, Applied Liberal Arts, Applied Mechanical Technology, Arts and Imaging Studies, ASL-English Interpretation, Business, Business Technology, Computer-Aided Drafting Technology, Computer-Integrated Machining Technology, Hospitality and Service Management, Laboratory Science Technology, Pre-baccalaureate Studies	Transfer requirements vary by program. Please contact NTID Office of Admissions (585) 475-6700 (voice/TTY), toll free in the U.S. and Canada at (866) 644-6843 (voice/TTY), or by videophone at (585) 743-1366.	Transfer requirements vary by program.

COLLEGE OF SCIENCE

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
School of Biological and Medical Sciences: Bioinformatics	1	Fall preferred	Biotechnology or Liberal Arts with biology	Courses in the liberal arts, sciences, and math
Biology	2	Fall preferred	Biology or Liberal Arts with biology option	Courses in the liberal arts, sciences, or math
Environmental Science	2	Fall preferred	Biology, Chemistry, Environmental Science, Liberal Arts with science option	Courses in the liberal arts, sciences, and math
Molecular Bioscience and Biotechnology (formerly Biotechnology), Molecular Bioscience and Biotechnology – Bioinformatics Option	2	Fall preferred	Biotechnology or Liberal Arts with biology	Courses in the liberal arts, sciences, and math
School of Mathematical Sciences: Applied Mathematics, Applied Statistics, Computational Mathematics	2	Any quarter	Liberal Arts with math/science option, Computer Science, Engineering Science, Science	Courses in math, computer science, and the liberal arts
Department of Chemistry: Biochemistry, Chemistry	2	Any quarter	Liberal Arts with chemistry option; Chemical Technology, Laboratory Technology	Courses in the liberal arts, chemistry, math, and physics
Department of Physics: Physics	2	Fall preferred	Liberal Arts with math/science option	Courses in the liberal arts, physics, math, and chemistry
Center for Imaging Science: Imaging Science	2	Fall preferred	Liberal Arts with math/science option	Courses in calculus or higher mathematics, college chemistry, calculus-based physics, and the liberal arts

1 Cooperative Education: 1-required, 2-optional, 3-internship or practicum required, 4-no specific requirement

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 quarterly 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 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, P.O. Box 92878-200, Rochester, N.Y. 14692-8978. Payment also may be made in person at the Student Financial Services Office on the first floor of George Eastman Hall. Credit card and e-check payments may be made at http://ipay.rit.edu/.

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.

Due dates for the 2011-2012 school year are as follows:
Fall Quarter—August 17, 2011
Winter Quarter—November 21, 2011
Spring Quarter—February 29, 2012
Summer Quarter—May 24, 2012

Tuition assessment policies

1. Matriculated day college students are charged the day rate for ALL courses taken, including evening division courses and courses taken while on co-op.

2. Students on co-op will not be charged tuition for those quarters unless they also are enrolled in classes.

3. Nonmatriculated students are charged for the type of course taken (evening rate for evening division courses; day rate for day courses, graduate rate for graduate courses).

4. Students taking courses during summer quarter should refer to the Summer Quarter Bulletin for policies and procedures.

FEE SCHEDULE 2011–12 (MATRICULATED DAY COLLEGE STUDENTS EXCEPT NTID)*

Tuition	Per Quarter	Per Year—Three Quarters
Full-time Undergraduate (12–20 Cr. Hrs.)	$10,528	$31,584
Part-time Undergraduate (Less than 12 Cr. Hrs.)	$714/Cr. Hr	
Student Activities Fee (Mandatory Charge)		
Full-time Undergraduate	$76	$228
Part-time Undergraduate	$38	$114
Student Health Fee (Mandatory Charge)		
Full-time Undergraduate	$75	$225
Residence Hall Room Charges §		
Double Occupancy	$2,032	$6,096
Single Occupancy	$2,337	$7,011
Board/Meal Plans **		
Ultra-Meal Plan (continuous entry to Grace Watson) + 5 meal options	$1,613	$4,839
14 Meals (Includes $97 debit/qtr.) + 5 meal options	$1,439	$4,317
12 Meals (Includes $249 debit/qtr.) + 5 meal options	$1,439	$4,317
All Debit (upperclassmen only)	$1,439	$4,317
Matriculated Evening Division students		
Undergraduate Tuition	$482/Cr. Hr.	

*See the National Technical Institute for the Deaf section of this bulletin for NTID cost information.
§ Additional single-occupancy rates are available, depending on square footage of rooms.
**Additional meal plans also are available, providing for different meal and debit account amounts. Information can be obtained from RIT Food Service upon request.

Other fees

In addition to the fees specified below, certain groups of students may incur other fees, as follows:

Orientation fee: $80 (one-time charge for new transfer students)
Orientation fee: $200 (one-time charge for new freshman students)
Quarterly photo/print facilities fee: $96 charged to all full-time photo and print media students; $45 per quarter charged to all part-time photography and print media students

Some courses require additional charges to cover laboratory, studio, or supply fees. Consult the registrar's quarterly schedule for those courses with additional fees.

Costs for books and supplies: These costs vary with the program followed and, to some extent, the electives chosen. In programs with minimal expenses (e.g., liberal arts, business, hospitality), books and supplies will average $1,925 or more annually. In the arts and crafts, costs may range from $900 to $1,100, and in photographic illustration, a realistic allowance is $2,000 a year in addition to cameras and related 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 quarter. Payment can be made by check, money order, or credit card, or the premium can be added to the student's account.

The open enrollment period ends 30 days after the start of the academic quarter in which the student first registers at RIT.

For plan and enrollment information, visit the university health plans website at www.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 quarterly 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

NTID students receiving monthly Social Security benefits can make arrangements to pay at the Student Financial Services Office. Students need to sign a promissory note quarterly. For additional information, call (585) 475-6186.

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.

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 quarter, 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 selecting three additional e-mail addresses 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 quarter 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 quarter 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.

3. Part-time students: If part-time students drop a course during the official drop/add period (first six days of classes in any quarter), they may contact the Student Financial Services Office for a full refund for the course dropped.

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 quarter 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 quarter

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

Partial refunds will be made according to the following withdrawal schedule and percentage of tuition reduction:

1. During official drop/add period (first six days of classes)—100 percent tuition reduction

2. From the end of the official drop/add period through the end of the second week of classes—70 percent tuition reduction

3. During the third week of classes—60 percent tuition reduction

4. During the fourth week of classes—50 percent tuition reduction

5. During the fifth week of classes—25 percent tuition reduction

6. Sixth and subsequent weeks—no tuition reduction

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 date on which a withdrawal form is properly completed will be the date of official withdrawal 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.

Advance 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 also 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 Mary Beth Nally, 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 Housing Operations. All students on a meal plan should check out with the Food Service administrative office, located in the Student Alumni Union, Room A520 (lower level). Refunds, when granted, are from the date of official checkout. Room and board refund policies are established by the Center for Residential Life and RIT Food Service.

Refund schedule and percentages for room and board are as follows:

Room

1. During the first week of classes—90 percent of unused room charge

2. During the second week of classes—75 percent of unused room charge

3. During the third week of classes—60 percent of unused room charge

4. During the fourth week of classes—50 percent of unused room charge

5. Fifth and subsequent weeks—no refund

Board

1. Within the first four weeks—75 percent of the unused meal/debit charges

2. After the fourth week (during week five through the end of week eight)—50 percent of the unused meal/debit charges

3. During the last two weeks of classes—no refund

Any student who intentionally defrauds or attempts to defraud the university of tuition, fees, or other charges, or who gives false information in order to obtain financial aid, is subject to legal liability, prosecution, and university disciplinary action.

Financial Aid and Scholarships

RIT feels strongly that cost should not prohibit qualified students from considering RIT.. With this in mind, the university offers a full range of traditional financial aid programs and a number of innovative financing plans as well.

More than 75 percent of RIT's full-time undergraduate students receive some type of financial assistance each year. Last year, RIT undergraduates received more than $258 million from all sources, including more than $150 million in scholarships and grants. Many families also took advantage of RIT's monthly, interest-free payment plan and a prepayment plan that guarantees participants no increase in tuition.

Your financial need

Eligibility for need-based financial aid at RIT begins with three basic requirements: graduation from high school or its equivalent, enrollment in a degree program (matriculation), and demonstration of financial need. Most financial aid programs also require at least half-time enrollment.

Financial need is the difference between the cost of education and the amount a student is expected to contribute toward those educational costs (the expected family contribution). The formula used to calculate the expected family contribution is called the federal methodology, and use of the formula is required when colleges are determining a student's financial need for any federal financial aid programs. Financial aid programs are designed to supplement the expected family contribution.

The Free Application for Federal Student Aid (FAFSA) should be completed in order to determine a student's financial need. Information on the FAFSA is used to calculate the expected family contribution. All colleges and universities that award federal financial aid use the FAFSA. Students can complete the FAFSA online at www.fafsa.gov/.

Determination of financial aid eligibility can be complex. Therefore, families are encouraged to contact the Office of Financial Aid and Scholarships with any questions or concerns. It is impossible for families to determine their eligibility for financial aid on their own. If students are denied financial aid from one source, that does not necessarily mean they will be denied financial aid from another source. Students and families are encouraged to pursue all available sources of financial aid.

Application

The process of applying for financial aid should begin in January of the year the student plans to attend college. It is important that freshman and transfer applicants file the FAFSA by March 1 in order to receive full consideration. Current RIT students should file the FAFSA and the RIT Financial Aid Form by April 1 in order to receive full consideration.

Students must reapply for financial aid each year by completing the FAFSA and the RIT Financial Aid Form. Also, students must maintain minimum standards of satisfactory academic progress. The Office of Financial Aid and Scholarships will make every effort to provide a similar amount of institutional gift aid, provided students apply on time and demonstrate a similar amount of financial need.

Notification

Freshman and transfer students can expect notification of financial aid awards beginning March 15. Current RIT students can expect award notification beginning in June.

Types of aid

At RIT, there are four general categories of financial aid: scholarships, grants, loans, and employment. An applicant for financial aid is considered for each of these categories.

Scholarships

Scholarships generally are awarded on the basis of academic record. RIT awards many such scholarships each year. Other typical scholarship sources are corporations, private donors, foundations, fraternal organizations, unions, and local and state governments.

RIT offers academic merit scholarships to both freshman and transfer students. For example, Presidential Scholarships, Achievement Scholarships, and Computing Medal Scholarships are awarded to freshmen. Trustee Scholarships, Achievement Scholarships, and Phi Theta Kappa Scholarships are awarded to transfer students. Scholarship recipients are chosen on the basis of their academic record, recommendations, extracurricular activities, and requirements for their intended major. The combined value of merit scholarships from all sources cannot exceed tuition. Please contact the Office of Financial Aid and Scholarships for more details on these programs.

The Office of Financial Aid and Scholarships encourages students to apply for scholarships awarded 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 award is necessary. If we are required by federal regulations to adjust a financial aid award as a result of an outside scholarship, we will make every effort to reduce the student's loan or work study award before reducing RIT need-based grants.

Grants

Grants are gifts of financial assistance awarded on the basis of demonstrated need. Grant award amounts from RIT vary up to $15,000 per academic year. RIT also awards grants under the federally funded Supplemental Education Opportunity Grant Program (SEOG). The Federal Pell Grant and the New York State Tuition Assistance Program (TAP) are additional examples of grants. Other states offer grants as well.

Student loans

Student loans are provided through a formal financial obligation that must be repaid. Students need to be aware of the interest charges, the method of payment after graduation, and the effect that loans will have on their ability to meet later financial obligations. Student loans generally are not repaid until after graduation or termination of study.

Many students utilize the Subsidized Federal Direct Loan or the Unsubsidized Federal Direct Loan in meeting their costs. RIT also awards Federal Perkins Loans. These programs are administered by the Office of Financial Aid and Scholarships for eligible students.

Parents also are eligible to participate in several educational loan programs designed to make funds available for college expenses. The Federal Parent Loan for Undergraduate Students (PLUS) is available to supplement other aid programs in meeting educational costs. While the PLUS is not based on need, the amount borrowed in any year cannot exceed educational costs minus other financial aid received.

Private lenders also may offer educational loans to assist families in meeting educational expenses. These loans are available to students who are creditworthy as determined by the lender. We encourage students and families to use alternative loans as a last option after first pursuing all federal loan options. If you decide that an alternative loan is right for you, you may borrow from any lender that you choose. Additional information is available from the Office of Financial Aid and Scholarships.

Employment

Employment opportunities are available to assist RIT students in meeting college expenses. Students may choose to defray some of their expenses by working part time while attending the university.

As part of a financial aid award at RIT, students may be offered employment in the federal work-study program. More than 6,000 students are employed on campus each year. The Student Employment Office also helps students secure part-time employment off campus.

RIT's cooperative education program is another employment opportunity available to assist in meeting college expenses. Students are encouraged to contact the Office of Cooperative Education and Career Services and their academic adviser to learn more about co-op opportunities.

Payment plans

The RIT Monthly Payment Plan enables students to spread their fixed costs over a 10-month period, with the initial payment beginning August 1. Fixed costs include tuition, fees, RIT housing charges, and RIT meal plans. The enrollment deposit required of all new undergraduates and the advance housing deposit required of returning students will be credited against annual charges. Financial aid also may be deducted from student charges to reduce the amount financed through the plan. Applications cannot be accepted after the first day of fall quarter classes for the academic year.

Additional information, as well as applications for the monthly payment plan, can be obtained from the Student Financial Services Office.

RIT also offers a tuition prepayment plan that guarantees no tuition increase for the equivalent of two years (six academic quarters) of undergraduate education. The cost for the plan is established each year. The plan is available to matriculated full-time undergraduate students who are not receiving any form of RIT need-based aid. Additional information is available from the Office of Financial Aid and Scholarships or the Student Financial Services Office.

Academic progress requirements for state aid programs

New York State Tuition Assistance Program (TAP)

In order to receive a TAP grant, an individual must be admitted as a full-time matriculated student, meet New York state residency and income requirements, pursue the program of study in which he or she is enrolled, and make satisfactory progress toward completion of his or her program of study.

Standard of Satisfactory Progress for the Purpose of Determining Eligibility for New York State Student Aid

Associate Degree—Quarter System

Before being certified for this payment	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
a student must have accrued at least this many credits	0	6	12	18	33	48	63	78	93
with at least this grade-point average	0	1.30	1.50	1.80	1.80	2.0	2.00	2.00	2.00

Bachelor's Degree—Quarter System

Before being certified for this payment	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th
a student must have accrued at least this many credits	0	6	12	18	33	48	63	78	93	108	123	138	153	168	183
with at least this grade-point average	0	1.30	1.50	1.80	1.80	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

TAP academic requirements are current as of the 2011-2012 year. Standards are subject to change by legislative action.

In addition to accruing degree credits and earning a minimum grade-point average, TAP recipients must:

1. Complete 6 credits per quarter to receive TAP payments two to four

2. Complete 9 credits per quarter to receive TAP payments five to seven

3. Complete 12 credits per quarter to receive TAP payments eight to 12

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 36 RIT credit hours in the previous three quarters. An accelerated quarter is the fourth consecutive quarter of 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-term 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 contact an institutional representative in the Office of Financial Aid and Scholarships to discuss their situation. The institutional representative will require documentation as appropriate and establish deadlines for submission of this documentation.

Under the regulations established by the Commissioner of Education, the decision of the institutional representative will be final. Students who, in the judgment of the institutional representative, satisfactorily meet the criteria for the waiver may have one waiver at the undergraduate level. One waiver also may be granted at the graduate level. Those wishing to apply for waivers must do so during the quarter 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 quarter in which academic standards were not met

2. Death of a member of the student's family during the quarter 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

These regulations are subject to legislative change.

Academic progress requirements for federal aid programs

Federal regulations require financial aid recipients to maintain minimum standards of satisfactory academic progress (SAP) for continued receipt of federally sponsored aid. All students receiving federal assistance must maintain matriculated status in a degree program. Regulations require a maximum time frame for degree completion, a quantitative measurement (credits attempted versus earned toward a degree) and a qualitative measurement (cumulative grade-point average). The annual review of academic progress considers all terms of enrollment, including terms in which no federal aid was received.

Full-time students who have never attended another college are allowed a maximum of six academic years (18 full-time academic quarters) to attain the bachelor's degree. Those pursuing associate degrees are allowed three academic years (nine academic quarters) for degree completion.

Students enrolled in eligible certificate or diploma programs in colleges other than NTID must complete credit hours on a full-time equivalent basis. Certificate/diploma program students are allowed a maximum of 150 percent of the published number of quarters required to complete their program.

Academic progress is reviewed at the end of spring quarter each year and includes a review of cumulative grade-point average and degree credits completed. Minimum cumulative grade-point average standards for full- and part-time students enrolled in RIT or NTID programs are as follows:

Completion of first quarter—minimum cumulative GPA = 1.0
Completion of second quarter—minimum cumulative GPA = 1.2
Completion of third quarter—minimum cumulative GPA = 1.4
Completion of fourth quarter—minimum cumulative GPA = 1.6
Completion of fifth quarter—minimum cumulative GPA = 1.8
Completion of quarters 6 to 18—minimum cumulative GPA = 2.0

Full-time students in colleges other than NTID are expected to complete 30 degree credits after every three academic quarters, as detailed below:

Completion of first academic year (three academic qtrs.)—30 degree credits required

Completion of second academic year (six academic qtrs.)—60 degree credits required

Completion of third academic year (nine academic qtrs.)—90 degree credits required

Completion of fourth academic year (12 academic qtrs.)—120 degree credits required

Completion of fifth academic year (15 academic qtrs.)—150 degree credits required

Completion of sixth academic year (18 academic qtrs.)—180 degree credits required

Part-time students must accumulate credit hours on a full-time equivalent basis.

Students enrolled in certificate, diploma, or associate degree programs at NTID must meet the same GPA standards required for other RIT colleges. However, for NTID programs, the qualitative standard is based on successful completion of 66 percent of annual credit hours attempted. In addition, the maximum time frame for program completion is equal to attempting a maximum of 150 percent of the published credit hours required for a particular NTID certificate, diploma, or degree.

Additional eligibility requirements

Transfer students

Cumulative grade-point average requirements are the same as for nontransfer students (i.e., students must obtain a 2.0 GPA at the end of six academic quarters). Transfer students also are expected to accumulate 30 degree credits for each three-quarter academic year.

However, the maximum number of quarters allowed for full-time students to accumulate remaining degree credits may be reduced. For every 10 credits, or fraction thereof, granted as transfer credit by RIT, the maximum number of quarters to accumulate remaining degree credits is reduced by one. For example, a student transferring from another college and granted 30 transfer credits would have 15 rather than 18 quarters to accumulate remaining degree credits; the same student transferring to an associate degree program would be allowed six rather than nine quarters to complete the degree. The calculations used in the reduction in maximum quarters allowed for degree completion apply to both federal aid programs and RIT-sponsored awards (18 academic quarters maximum).

Part-time students
Students registering for 6 to 11.5 credits per quarter and receiving federal financial assistance must meet the same grade-point average requirements as full-time students (i.e., attainment of a 2.0 GPA after six academic quarters). The established time frame for part-time students is 12 academic years (36 half-time quarters) for completion of bachelor's degree requirements. Associate degree candidates are allowed six academic years (18 half-time quarters) for degree completion. At the end of each three-quarter academic year, 15 credits must be accumulated toward the degree. Quarters in which a student is registered for less than 6 credit hours will be counted on a prorated basis.

Repeated course work
Students repeating a course previously passed may do so only once. A course repeated more than once will not be included when determining enrollment status for federally sponsored financial aid.

The federal standards of satisfactory academic progress listed are applicable to the following aid programs: Federal Work-Study, Federal Pell and SEOG grants, and Federal Perkins, Direct Subsidized, Direct Unsubsidized, and Direct PLUS loans.

Student loan recipients also should note that all Federal Direct Loan Programs have specific annual and cumulative maximum amounts. The loan limits are listed in the Undergraduate Financial Aid Programs 2011-2012 chart and in the U.S. Department of Education Student Guide. Copies of the guide are available in the Office of Financial Aid and Scholarships.

Notification and appeal
Students whose academic progress is not in compliance with federal regulations will be notified of the deficiency. Students who do not meet minimum SAP standards may continue to receive federal aid during a probationary period, not to exceed one academic year, and not to exceed the 150% timeframe for degree completion, as the result of a successful appeal. Students may appeal due to special circumstances such as death of a relative, or injury or illness of the student. The following information must be provided to the Office of Financial Aid and Scholarships to be considered for receipt of federally sponsored financial aid during a probationary period:
- Documentation of student's special circumstances
- Written letter from student indicating why the student failed to make SAP and what has changed in the student's situation that would allow the student to meet SAP standards, and
- A written plan of work from the student's academic adviser that outlines the courses required and the minimum GPA requirements for the next academic year

Academic progress requirements for RIT grants and scholarships
Academic progress requirements for RIT need-based grants are the same as the requirements for federal aid programs. 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.

Student responsibilities
Recipients of financial aid are responsible for reporting 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 the applicant's financial aid.

Financial aid refund policy

Return of federal funds
In accordance with federal regulations, the Office of Financial Aid and Scholarships recalculates quarterly federal aid eligibility for students who withdraw, drop out, are suspended, or take a leave of absence prior to completing 60 percent of a quarter.

"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 quarter 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 quarter. 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 Perkins 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 quarterly award will be credited to the student's account.

RIT grants and scholarships
If a credit balance remains after all federal, state, and private adjustments, a percentage of the remaining credit balance is returned to the RIT scholarship account according to the following formula:

SCHOLARSHIP		
Scholarship plus student payments	=	Percent returned to RIT scholarship program

UNDERGRADUATE FINANCIAL AID PROGRAMS 2011-2012

MERIT SCHOLARSHIPS	ELIGIBILITY	AMOUNT†	WHERE TO APPLY
RIT Presidential Scholarships	Freshman applicants with combined SAT scores of 1950 or higher (or ACT composite of 28 or higher) and a secondary school rank in the top 20% at the end of junior year, OR combined SAT scores of 1860 or higher (or ACT composite of 27 or higher) and a secondary school rank in the top 10% at the end of the junior year.	$9,000 to $15,000 per year (amounts based on merit). Renewable.	All freshman applications submitted to RIT by February 1 will be reviewed for possible selection.
National Merit, National Achievement, and National Hispanic Scholarships	Semifinalists or finalists in any of these three national scholarship programs.	Combined RIT Presidential and Merit Scholarships totaling $17,000 or more per year. Renewable.	High school records provided for admission must indicate student's semifinalist or finalist selection.
RIT Achievement Scholarships for Business, Liberal Arts, and Hospitality Management	Freshman applicants for these programs demonstrating outstanding leadership, service, entrepreneurship, or citizenship with combined SAT score of 1800 or higher (ACT 26) and B+ average.	$6,000 to $9,000 per year. Students qualifying for an additional RIT merit scholarship will automatically be awarded the scholarship with the highest amount. Renewable.	Freshman admission applications for these academic programs submitted by February 1 will be reviewed for possible selection based on activities, recommendations, and academic record.
RIT Achievement Scholarships for Art, Design, and Crafts	Freshman applicants for these academic programs with combined SAT score of 1800 or higher (ACT 26) and B+ average who submit outstanding art portfolios.	$6,000 to $9,000 per year. Students qualifying for an additional RIT merit scholarship will automatically be awarded the scholarship with the highest amount. Renewable. Up to 25 awarded each year.	Freshman admission applications and art portfolios submitted by February 1 will be reviewed for possible selection.
RIT Achievement Scholarships— All Programs	Freshman applicants with combined SAT score of 1800 or higher (ACT 26), strong extracurricular achievements, and B+ average.	$6,000 to $9,000 per year. Students qualifying for an additional RIT merit scholarship will automatically be awarded the scholarship with the highest amount. Renewable. Up to 100 awarded each year.	Freshman admission applications submitted by February 1 will be reviewed for possible selection.
RIT Honors Program Scholarships	Freshmen admitted to the RIT Honors program.	$1,000 per year. Renewable with Honors program membership. Awarded in addition to the RIT Presidential Scholarship.	See the undergraduate admission application for instructions. Must apply by February 1.
RIT Computing Medal Scholarships	Awarded to Computing Medal winners selected by participating high schools based on demonstrated interest and/or outstanding achievements in computing.	$6,000 per year. Students qualifying for an additional RIT merit scholarship will automatically be awarded the scholarship with the highest amount. Renewable.	Must apply for admission to RIT by February 1 to be considered.
RIT Innovation and Creativity Award Scholarships	Awarded to Innovation and Creativity Award winners selected by participating high schools based on outstanding achievements in innovation, creativity, and entrepreneurship.	$6,000 per year. Students qualifying for an additional RIT merit scholarship will automatically be awarded the scholarship with the highest amount. Renewable.	Must apply for admission to RIT by February 1 to be considered.
RIT National Co-op Scholarships	Winners selected based on academic record and required scholarship application essay.	$6,000 per year. Students qualifying for an additional RIT merit scholarship will automatically be awarded the scholarship with the highest amount. Renewable. Up to 10 awarded each year.	Submit scholarship application online at: www.rit.edu/co-opscholarship. Apply between October 1 and February 15.
RIT/SAE Engineering Scholarships	Freshman applicants to engineering technology or engineering programs. Based on academic record.	$6,000 per year. Students qualifying for an additional RIT merit scholarship will automatically be awarded the scholarship with the highest amount. Renewable. Up to 25 awarded each year.	Download scholarship application at: www.students.sae.org/awdscholar/scholarships/. Mail application to SAE by Dec. 1.
RIT/FIRST Robotics Scholarships	Freshman applicants with combined SAT score of 1800 or higher (ACT 26) and B+ average who have participated on a high school FIRST team.	$6,000 per year. Students qualifying for an additional RIT merit scholarship will automatically be awarded the scholarship with the highest amount. Renewable. Up to 10 awarded each year.	Download scholarship application at: www.usfirst.org. Mail scholarship application to RIT and apply for admission by February 1.
RIT/Project Lead The Way (PLTW) Scholarships	Freshman applicants with combined SAT score of 1800 or higher (ACT 26) and B+ average who complete two or more PLTW courses.	$6,000 per year. Students qualifying for an additional RIT merit scholarship will automatically be awarded the scholarship with the highest amount. Renewable. Up to five awarded each year.	Submit a letter of recommendation from a PLTW teacher along with RIT admission application and school transcripts by February 1.

RIT Trustee Scholarships for Transfer Students	Transfer applicants with a GPA of 3.3 or higher (computed by RIT) who will complete an associate degree before entering RIT.	$9,000 per year with transfer GPA of 3.6 or higher; $6,000-$7,500 per year with GPA of 3.3-3.59. May be combined with Phi Theta Kappa scholarship. Renewable.	Submit all required admission application documents by April 1 for summer/fall entry; October 1 for winter entry; January 15 for spring entry.
RIT Achievement Scholarships for Transfer Students	Transfer applicants with 3.3 or higher transfer GPA (computed by RIT) and 30 semester or 45 quarter hours completed at previous institution.	$6,000 per year. May not be combined with RIT Trustee Scholarship. Renewable.	Submit all required admission application documents by April 1 for summer/fall entry; October 1 for winter entry; January 15 for spring entry.
RIT Phi Theta Kappa Scholarships for Transfer Students	Awarded to transfer students with an associate degree elected to Phi Theta Kappa honor society.	$2,000 per year. May be combined with RIT Trustee or Achievement Scholarship. Renewable.	Proof of PTK membership must be submitted with transfer admission application.
RIT Nathaniel Rochester Society (NRS) Scholarships	Full-time undergraduate students who have completed at least 72 credit hours at RIT with a GPA of 3.4 or higher. Winners selected by NRS scholarship Committee.	Maximum award is $2,000 for six quarters of academic study ($333 per quarter applied toward tuition charges). Awarded in addition to other financial aid and scholarships.	Download scholarship application at:www.rit.edu/nrs and file the completed application in March.
ROTC Scholarships	Students enrolling in ROTC who are academically qualified.	Tuition support, fees, books, and monthly stipend.	Air Force: (585) 475-5197; Army: (585) 475-2881; Navy: (585) 275-4275
RIT/ROTC Subsidy	Army, Air Force, or Navy ROTC cadets awarded three- or four-year scholarships prior to enrollment.	Up to the amount of a standard room and board plan, minus other financial aid and benefits.	Contact the Office of Financial Aid and Scholarships.

† Scholarship amounts indicated are based on RIT day tuition rates. Awards may be prorated for NTID-sponsored students or for evening tuition rates.

NEED-BASED GRANTS	ELIGIBILITY	AMOUNT†	WHERE TO APPLY
RIT Grants	Students demonstrating financial need.	Amounts vary up to $15,000 per year for full-time study.	File the Free Application for Federal Student Financial Aid (FAFSA) by March 1 for priority consideration.
RIT Endowed Scholarships	Full-time RIT students meeting selection criteria as established by the donor for each program; most awarded to upperclassmen based on financial need and academic performance at RIT.	Amounts vary	File the Free Application for Federal Student Aid (FAFSA) by the priority deadline.
NTID Grant-in-Aid	Full-time students enrolling in RIT's National Technical Institute for the Deaf (NTID) who demonstrate financial need.	Amounts vary.	File the Free Application for Federal Student Aid (FAFSA) by the priority deadline.
RIT/NTID Grant	NTID students who are enrolled in an RIT bachelor's degree program who demonstrate financial need.	Amounts vary.	File the Free Application for Federal Student Aid (FAFSA) by the priority deadline.
RIT Part-time Studies Grant	Part-time undergraduate students enrolled for less than 12 credit hours in an RIT degree program who demonstrate financial need.	Amounts vary.	File the Free Application for Federal Student Aid (FAFSA) by the priority deadline.
RIT Opportunity Scholarships	Full-time matriculated students who demonstrate exceptional financial need. Preference is given to students who are from underrepresented populations and those not traditionally studying in certain academic disciplines.	Up to $3,000 per academic year; renewable.	Apply for admission to RIT by February 1 and file FAFSA by March 1.
New York state Tuition Assistance Program (TAP)	Full-time students who are New York state residents and meet state income guidelines.	$500-$5,000 per year for entering freshmen; transfer and returning student maximum varies.	File New York state Express TAP Application and the Free Application for Federal Student Aid (FAFSA).
New York state Aid for Part-time Studies (APTS)	Matriculated undergraduate New York state residents enrolled for 6-11 credits per term who meet NYS residency requirements and demonstrate financial need based on NYS net taxable income; must not have received the equivalent of four years of NYS TAP aid.	Maximum award is $2,000 per year, not to exceed cost of tuition.	Submit Aid for Part-time Studies Application to RIT's Office of Financial Aid and Scholarships.
Federal Pell Grant	Students who are pursuing their first bachelor's degree and meet need criteria.	$555 to $5,550 per year; prorated for part-time study.	File the Free Application for Federal Student Aid (FAFSA).
Federal Supplemental Educational Opportunity Grant (SEOG)	Students with high financial need (those who qualify for a Federal Pell Grant).	$100-$4,000 per year.	File the Free Application for Federal Student Aid (FAFSA).
NYS Higher Education Opportunity Program (HEOP)	Economically and academically disadvantaged residents of New York state.	Amounts vary, based on individual need and New York state funding.	Contact the HEOP director at RIT (585-475-2221) for eligibility guidelines.
Other State Grants	Varies.	Amounts vary.	Contact the state education department in your state.

† Scholarship amounts indicated are based on RIT day tuition rates. Awards may be prorated for NTID-sponsored students or for evening tuition rates.

LOANS	ELIGIBILITY	AMOUNT†	WHERE TO APPLY
Federal Perkins Loans	Students who meet requirements established by federal government.	Up to $5,000 per year;	File the Free Application for Federal Student Aid (FAFSA).
Federal Direct Loans	All students enrolled at least half-time in a degree program.	Maximum amount: 1st year: $3,500; 2nd year: $4,500; 3rd, 4th, 5th years: $5,500. Additional maximum $2,000 Unsubsidized Federal Direct Loans – all years.	File the Free Application for Federal Student Aid (FAFSA).
Federal Direct Loans – Independent Students	All independent undergraduates enrolled at least half time in a degree program.	Maximum amount (including unsubsidized): 1st year: $9,500; 2nd year: $10,500; 3rd, 4th, 5th years: $12,500.	File the Free Application for Federal Student Aid (FAFSA).
Federal Direct PLUS Loans	Parent of a dependent student who is enrolled at least half time in a degree program.	Total cost of education minus all other financial aid awarded.	File the FAFSA and obtain loan application from RIT Office of Financial Aid and Scholarships.

EMPLOYMENT	ELIGIBILITY	AMOUNT†	WHERE TO APPLY
Federal Work Study Program	Students with financial need; most jobs provided are on campus, and some community service positions are available.	Varies depending on hours and wage rate (RIT wage rates start at $7.25 per hour).	File the Free Application for Federal Student Aid (FAFSA).
RIT Employment Program	No financial need requirement; may be on campus or off campus.	Varies, depending on hours and wage rate (RIT wage rates start at $7.25 per hour).	Contact the RIT Student Employment Office at www.rit.edu/emcs/seo.

OTHER AWARDS	ELIGIBILITY	AMOUNT†	WHERE TO APPLY
Regents Award for Child of Veteran (CV)	Students whose parent(s) served in the U.S. Armed Forces during specified periods of war or national emergency and, as a result of service, either died, suffered a 40% or more disability, was classified as missing in action, or was a prisoner of war. The veteran must currently be a New York state resident or have been a New York state resident at the time of death.	$450 per year for up to five years, depending on the normal length of the program.	Same as TAP. In addition, file the CV Award Supplement available at www.hesc.com. May 1 deadline.
Military Service Recognition Scholarship (MSRS)	Children, spouses, and financial dependents of members of the United States Armed Forces or state-organized militia who, at any time on or after Aug. 2, 1990, while New York state residents, died or became severely and permanently disabled while engaged in hostilities or training for hostilities.	Award equal to SUNY four-year college tuition and mandatory educational fees (or student's actual tuition and fees, whichever is less) and allowances for room and board, books, supplies, and transportation.	Same as TAP. In addition, file the Military Service Recognition Scholarship Supplement, available at www.hesc.com.
Memorial Scholarships for Families of Deceased Firefighters, Volunteer Firefighters, Police Officers, Peace Officers, and Emergency Medical Service Workers.	Must be a child or spouse of deceased firefighter, volunteer firefighter, or emergency medical service worker, police officer, peace officer, who died as a result of injuries sustained in the line of duty.	Award equals SUNY four-year college tuition and fees and allowances for room and board, books, supplies and transportation.	Same as TAP. In addition, file the appropriate award supplement, available at www.hesc.com. May 1 deadline.
NYS Aid to Native Americans	Members of a New York state tribe and their children who are attending, or planning to attend, a college in New York state and are New York state residents.	Up to $2,000 per year for a maximum of four years (five years for certain programs)	Contact: the Native American Education Unit, NYS Education Department, Room 374 EBA, Albany, NY 12234, (518) 474-0537.
Vietnam Veterans Tuition Award Program	Eligible veterans who are New York state residents.	$2,000 per year for full-time study or $1,000 per year for part-time study; available for undergraduate or graduate study.	Same as TAP. In addition, file the Vietnam Veterans Tuition Award Supplement at www.hesc.com.
NYS Regents Professional Opportunity Scholarship	U.S. citizen and permanent NYS resident as defined by legislation, for certain approved professional programs (e.g., accounting, engineering, physician's assistant); must agree to practice for 12 months in chosen profession in NYS for each annual payment received.	$1,000-$5,000 per year (TAP and some other benefits may supplement this award).	Contact: NYS Education Department, Office of K-16 Initiatives and Access Programs, Scholarship & Grants Administration Unit, Room 1078 EBA, Albany, NY 12234. Call (518) 486-1319.
Robert C. Byrd Honors Scholarship Program (federally funded)	Academically talented high school seniors who are U.S. citizens and NYS residents attending any approved institution of higher education.	$1,500 per year, 310 awards statewide (10 to each of 31 congressional districts).	Contact high school guidance counselor for application information.
New York Scholarships for Academic Excellence	Outstanding graduate from registered New York state high schools. Awards are based on grades in certain Regents exams.	$1,500 to top graduating senior of each high school in the state; $500 to other academically gifted students.	Contact your high school guidance counselor.

† Scholarship amounts indicated are based on RIT day tuition rates. Awards may be prorated for NTID-sponsored students or for evening tuition rates.

Veterans Benefits	Eligible veterans and children of deceased veterans or service-connected disabled veterans.	Amounts vary.	Contact the Office of Veterans Affairs at (888) 442-4551, or visit their website at www.va.gov.
Aid to Native Americans	Students who are at least one-quarter American Indian, Eskimo, or Aleut who demonstrate financial need	Amounts vary	Contact U.S. Department of Interior, Bureau of Indian Affairs, Federal Bldg., Room 523, 100 S. Clinton St., Syracuse, NY 13202.

† Scholarship amounts indicated are based on RIT day tuition rates. Awards may be prorated for NTID-sponsored students or for evening tuition rates.

Notes:

This chart covers the most commonly awarded financial aid programs available to full-time undergraduate students at RIT. Information is correct as of May 2011. Most programs require satisfactory progress toward degree completion to maintain eligibility.

Filing the FAFSA by March 1 (March 15 for transfer students and April 1 for continuing students) will ensure priority consideration for all programs. Applications filed after this date will receive consideration as long as funds remain available.

Endowed Scholarships

Each year the university awards endowed scholarships, made possible through the generosity of hundreds of individuals and organizations. Awards are made by RIT's Office of Financial Aid and Scholarships 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.

Harriet Thayer Adams Scholarship
Max Adler Scholarship
George Alden Scholarship Fund
Mary R. Alexander Scholarship
Fanny Knapp Allen Scholarship
Altier & Sons Scholarship
Alumni Legacy Scholarship
Amzalek Ames Scholarship
Salvador Anchondo Jr. Memorial Scholarship
Robert Anderson Scholarship
Avis Mason Andrews Graduate Scholarship
Betsy L. Andrews Scholarship
Clara L. Andrews Scholarship
Ezra R. Andrews Scholarship
Kate Rider Andrews Scholarship
Randall Andrews Scholarship
Howard Applegate Scholarship
Association of Women in Computing
Lee Augustine Memorial Scholarship
Ralph Avery Scholarship
Alfred Bader COB International Study Program
Helen Bader Foundation
Joseph Bader Scholarship
Andrew Baker Scholarship at NTID
David Baldwin Scholarship
Thomas Ward Ball Scholarship
Barlow Endowed Scholarship Fund
John & Mary Bartholomew Scholarship
Bruce and Nancy Bates Scholarship
Bausch & Lomb Scholarship
John Bausch Scholarship
Clarence & Birdice Beal Scholarship
Alice Beardsley Memorial Endowed Scholarship Fund for Interpreting Students at NTID
Ned Behnke Memorial Scholarship at NTID
Richard Benjamin Memorial
Hillary Blair Benner Memorial Scholarship

Bennett Family Scholarship
Frank P. Benz Jr. Memorial Scholarship
Ruth L. Bernhardt Scholarship
Ruth E. Bice Endowed Chemistry Scholarship
Fanny R. Bigelow Scholarship
Roscoe Bills Scholarship
Howard Bingham/Eastman Kodak Scholarship
Helen & Frederick Blaessig Memorial Scholarship
Joseph & Helen Blatecky Scholarship
Harriet Blickwede Scholarship
Boeing Company Scholarship
Donald & Jaris Boyce Scholarship
Farid Bozorgi Memorial Endowed Scholarship Fund
John and Honorable Caroline Branch
Braverman Scholarship
Joseph Briggs Endowed Scholarship
Chester W. Brink Scholarship
Stephen Briody Scholarship
Bernard B. Brody Medical Sciences Scholarship
Steffan Brown Scholarship
Peter C. Browne Scholarship
Nettie Bullis Scholarship
Cheryl Bulls, Lynette Moore, and Susan Willoughby Memorial Scholarship
Business Alumni Scholarship
Business Faculty Endowed Scholarship
College of Business Recent Alumni
Business Women's Alumni Network
Owen Butler Scholarship
Orilla Butts Scholarship
Harold Cadmus Memorial Scholarship
Deborah Cahn Memorial Scholarship
Cala Family Endowment
Donn J. Calabrese Scholarship
Campus Connections Book and Supply Scholarship
Richard Capilla Scholarship
Chester Carlson Scholarship
Howard F. Carver Scholarship
Howard T. Case Scholarship
Theodore Chapman Scholarship
Arunas Chesonis Scholarship for the College of Business
Pamela Chesonis Scholarship in the School for American Crafts
John & Ruth Christie Scholarship
Citigroup Foundation Endowed Scholarship Fund at NTID
Adele Hathaway Clark Scholarship
Erma and Earl Clark Scholarship

Florence Clark Scholarship
H. E. Clark Scholarship
Ruth and Brackett Clark Scholarship
Class of '69 Scholarship
Albert G. Coenen Scholarship
Eugene Colby Scholarship
Coleman Corporation Scholarship
Wells Coleman Scholarship
Colleges of RIT Annual Fund Awards
Ward D. Collister Scholarship
Comstock Foundation Scholarship
Karen Conner Annual Scholarship
Continental Corporation Scholarship Endowed Fund at NTID
Henry and Pinney Cooke Scholarship
Jerome Countryman Memorial
Lillian M. Cowin Memorial Endowed Scholarship Fund
Walter Crighton Scholarship
Alvin Cronig Scholarship
Crowe, Chizek and Company
CSX Scholarship
Byron Culver Scholarship
Curtice Burns Scholarship
Robert R. and Donna E. Davila Endowed Scholarship Fund
Alfred L. Davis International Student Scholarship
Alfred L. & Ruby C. Davis Continuing Education Scholarship
Alfred L. & Ruby C. Davis Leadership Award
Nancy J. Davis Scholarship
Donald F. and Maxine B. Davison Scholarship
James J. DeCaro Endowed Scholarship Fund
Del Rosso Family Scholarship
De Ridder Corporation Scholarship
Eliot Derman–GTS Scholarship
Michael DiRoma Memorial Scholarship
Ronald Dodge Engineering Scholarship
Ronald Dodge Faculty/Staff Grants Endowed Scholarship
Ronald Dodge Memorial Endowed Scholarship Fund
Patrick Donovan Memorial
Doolittle/Merrill Scholarship
Dorothy E. Ann Fund (D.E.A.F.) Endowed Scholarship
Thomas W. Dougherty Scholarship
Chris Dudek Memorial Scholarship
Mr. and Mrs. Joseph F. Dyer Endowed Scholarship Fund
Eberly Family Scholarship
ECI Systems & Engineering
ECT Department Academic Excellence Scholarship
Educational Technology Center Scholarship
Eisenhart Memorial Scholarship
Robert Elder Scholarship
Ellingson Foundation Scholarship
Fred Emerson Foundation Scholarship
Isabel & Benjamin Emerson Scholarship
Raymond Englert Scholarship
Gerald Ephraim Scholarship
Louise Epstein Supply Scholarship in SAC
Eyer Foundation Scholarship
Max Factor Family Foundation Endowed Scholarship Fund
John Doane Fay Scholarship
Rose & George Feigenbaum Scholarship Endowed Scholarship
   Fund

Nancy and Len Fein Endowed Scholarship
William & Mildred Feinbloom Scholarship
Ruth H. Fenyvessy Memorial Endowed Scholarship Fund
Joseph Ferraro Memorial Scholarship
James Fitz Memorial Scholarship
Flora J. Foley Scholarship
Benjamin Forman Scholarship
Maurice & Maxine Forman Endowed Scholarship Fund
Donald J. Forst Endowed Scholarship
J. Andrew Foster Senior and J. Andrew Foster Junior Scholarship
Dr. Eugene Fram Scholarship
Ron Francis Scholarship
Howard Freckleton and Roy Hamel Endowed Scholarship
R. T. French Scholarship
Richard A. Freund Scholarship
Ann Wadsworth Frisina Memorial
Dr. Robert Frisina Award
Max & Helene Frumkes Memorial
Karl Fuchs Scholarship
Garlinghouse Endowed Scholarship Fund
Garthwaite-Brennan Endowed Scholarship
Gegeheimer/McClure Scholarship
Frank Geist Scholarship
Gelsomino Entrepreneurship Scholarship
General Motors Scholarship
George T. Georgantis Memorial Scholarship
Sarah Margaret Gillam Scholarship
Jean Gillings Scholarship
Gitner Family Scholarship
E. B. Gleason Scholarship
George & Anne Gleason Memorial Scholarship
Kate Gleason COE Alumni Endowed Scholarship
Kate Gleason Scholarship
Good Samaritan Association Scholarship
Allen & Gloria Gopen Endowed Scholarship Fund
George Gordon Scholarship
Isaac Gordon Scholarship
Goulds Pumps Inc. Award
Graflex Scholarship
Phillip L. Graham Scholarship
Gravure Foundation Scholarship
Edward Hableib Scholarship
Hakes Assoc. Scholarship
Ezra Hale Scholarship
Hale Foundation Packaging Scholarship
William B. Hale Scholarship
Mildred F. Hall Endowed Scholarship
Sil Hall Scholarship
Carter Harmon Scholarship
Denton P. and Alice F. Harris Endowed Scholarship
Harris Semiconductor Scholarship
Dr. Howard N. Harrison Scholarship
Franz Haverstick Scholarship
G. Sherwin Haxton Scholarship
Safford Hazlett Scholarship
Healthcare Purchasing Scholarship
William Randolph Hearst Endowed Scholarship
Heidelberg/RIT Scholarship
Mary Jane Hellyar Endowed Scholarship Fund

Hermance Family Scholarship
Sol Heumann Scholarship
Brian E. and Jean P. Hickey Scholarship
John and Catherine Hill Endowed Scholarship
Francis Sallie Ann Hilliard Scholarship
Laura Church Hillman Scholarship
Richard J. Hoerner Endowed Scholarship
Hoffend Scholarship Fund
Hogadone & Larwood Scholarship
Holmes Family Endowed Scholarship
Eric Honsberger Endowed Memorial Scholarship
Charles C. Horn Scholarship
Frank Horton Endowed Scholarship Funds
Jerry Hughes Endowed Scholarship
Alan & Vicki T. Hurwitz Family Endowed Scholarship
Frank Hutchins Scholarship
The Ralph Hymes Endowed Scholarship Fund
Arthur Ingle Scholarship
Insero and Company Scholarship
Institute of Fellows Scholarship
Interpretek Scholarship
Louis & Sylvia Jackson Scholarship
Candy Thompson Jagus Endowed Memorial Scholarship
Dorothy B. James Scholarship
Sharyn & Steven Janis Scholarship
Jack Jenkins Endowment Scholarship
Lucille Ritter Jennings Endowed Scholarship Fund
Leo Joachim Scholarship
Helen Lucille Jones Memorial Scholarship
John Wiley Jones International Scholarship
John Wiley Jones Science Scholarship
Michael Jones Memorial Scholarship
Isaac Jordan Memorial Scholarship
Abraham & Teresa Katz Scholarship
Robert and Doris Kaufman Memorial Endowed Scholarship
David T. Kearns Endowed Fund for Technical Excellence
Henry & Mary Kearse Memorial Fund
Stephen J. Kersting Memorial Scholarship
Katherine Keyes Scholarship
Drew & Francis King Endowment Fund
Kirsch Scholarship in Science
Ruth Klee Award
David Klieman Scholarship
Kodak Professional Imaging Award
Lowell Koenig Scholarship
Bernard & Mary Kozel Entrepreneurial Scholarship
Jack Kronenberg Scholarship
Sara L. Kuhnert Endowed Scholarship Fund at NTID
Lancer Graphics Scholarship
Francis Lang Scholarship
Learning Support Services Scholarship
LeChase Corp. Scholarship
Leenhouts Family Scholarship
Lehigh Press Scholarship
JayJ and Stephanie M. Levine Scholarship
Richard B. Lewis Memorial Scholarship
Liberal Arts Alumni and Friends Endowed Scholarship
The Edward H. Lichtenstein Memorial Endowed Scholarship Fund
Abe Lincoln Scholarship

Dawn and Jacques Lipson M.D. Scholarship
Lockheed Martin Scholarship
Lomb Citizen Soldier Scholarship
Lomb People Scholarship
Arthur E. Lowenthal Scholarship
Eugene M. Lowenthal Jr. Memorial Scholarship
Max Lowenthal Memorial Scholarship
Claire Booth Luce Scholarship
Patrick T. Lynch Memorial Scholarship
M/E Engineering
MITEL Scholarship
MMET Faculty, Staff, Alumni
M&T Bank Urban Scholars Scholarship
Barbara MacCameron Scholarship
Robert J. Macon Memorial Scholarship
Lois C. Macy Scholarship
Magazine Publishers Scholarship
Thomas H. Maguire Memorial Scholarship
Jack & Judy Maltby Scholarship
Manufacturers Hanover Scholarship
Donald Margolis Scholarship
Marine Midland Fellowship
William Mariner Scholarship
Clara Martin Scholarship
Dr. James C. Marsters Endowed Scholarship Fund
Margaret McEwen-Craven Scholarship
John McIntee Scholarship
McIntosh Education Fund
Dean McWhirter Memorial Scholarship
Melissa Meisenhelder Scholarship
Alice Melnyk Scholarship
Bernadette Merkel Memorial Scholarship
Norman Miles Scholarship
Norman Miller Electrical Engineering Scholarship
Barbara Milliman Scholarship
Abraham & Sadie Milstein Scholarship
Earl Morecock Scholarship
Bernice Skinner Morelock Scholarship
Clifford Waite Morgan Scholarship
Catherine Morse Scholarship
Mowris-Mulligan Memorial Scholarship
Charles W., Sue L., Freda L. Muffitt Scholarship
Dennis and Cathy Mullen Endowed Scholarship
Irene Muntz Endowed HSM Scholarship
Irene L. Muntz Endowed Scholarship
Dr. Gengi Murai Endowed Scholarship Fund
Nicholas F. Murray Memorial Scholarship
Michelle "Shelley" Nagoette Memorial Scholarship
Nathaniel Rochester Society Scholarships
Don Naylor Scholarship
C. B. Neblette Memorial Scholarship
Evaline and Louis Neff Scholarship
Grace B. Norton Scholarship
Ruth D. Norton Endowed Scholarship Fund
Joseph F. Noveck Memorial Scholarship
Meta Noveck Memorial Scholarship at NTID
NTID Alumni Association Endowed Scholarship Fund
NTID Annual Fund
NTID Architectural Technology Award Scholarship Fund

NTID Business Careers Endowed Scholarship Fund
NTID Foundation Endowed Scholarship Fund
NTID Performing Arts Endowed Scholarship Fund
NTID Printing Production Scholarship
NTID Science/Engineering Careers Endowed Scholarship Fund
NTID Visual Communication Endowed Scholarship Fund
NYS Federation of Home Bureaus, Inc. Endowed Scholarship Fund
  in Honor of Martha Perry
Milton H. & Ray B. Ohringer Endowed Scholarship Fund
Omnova Foundation
Osher Foundation Family Scholarship
PAETEC Scholars Program
Robert F. Panara Endowed Scholarship Fund
Mohal Patel Scholarship
Sarah Louise Patterson and Minneiska Louise Hall Scholarship
Barbara Paul Memorial Scholarship
William Farley Peck Scholarship
Gerald & Pamela Pelano Scholarship
Paul Pelletier Memorial Scholarship
Anthony J. Petrucelli '61 Memorial Scholarship
Phillips ECG Inc. Scholarship
Phoenix Fiction Award
Physics Faculty and Alumni Endowed Scholarship
Leonard T. Pimental Scholarship
Seth Policzer and Syed Ali Turab Memorial Endowed Scholarship
Eugene and Wanda Polisseni Award
Polyfibron Technologies
Paul W. Porter Industrial Design Scholarship
A. C. Powers Memorial Scholarship
Praxair Scholarship
Prentice Family Scholarship
David Presco Scholarship
John Myers Pritchard
Pulver Family Endowed Scholarship Fund
Q. C. I. Corporation Scholarship
Queens Group Scholarship
RTEMD Scholarship
Harold Rafael Memorial
Byron J. Ramseyer
Eustis and Thelma Rawcliffe
Real Time Enterprises Scholarship
Redcom Undergraduate Scholarship
Bill Reedy Eastman Kodak Scholarship
Bill Reedy Memorial Scholarship
Kenneth & Margaret Reek Scholarship
Russell Reilly Scholarship
R. Bruce Reinecker Scholarship
Jack Renfro Scholarship
Carl Reynolds Computer Science Scholarship
Tom and Betty Richards Endowed Scholarship
Ronald S. Ricotta Scholarship
Edward J. Ries Memorial Scholarship
RIT Alumni Legacy Scholarship
RIT Alumni Network
RIT Facilities Management Employer Endowed Scholarship
RIT International Student Alumni Endowed Scholarship
RIT International Student Association
RIT Parents Endowed Scholarship
RIT Women's Council Scholarship

Frank Ritter Memorial Scholarship
Robbins & Meyers Scholarship
Archibald & Mary Robinson Scholarship
Rochester Area Business Ethics Foundation Scholarship
Rochester City School District Scholarship Fund
Rochester Midland Endowed Scholarship
Rochester Sales & Marketing Executives Scholarship
Rock-Tenn Packaging Scholarship
Ian Rodgers Memorial Scholarship
Roosevelt Paper Scholarship
Robert Root Award
Willis Jennings Rose Scholarship
Rebecca Rosenberg Scholarship
Phillip Rosenzweig Memorial Scholarship
Madelon and Richard Rosett Scholarship
Rothman Family Endowment
Rubens Family Foundation
Bud & Joan Rusitzky
Laura Bradford Russell Scholarship
David & Fannie Rutty Memorial Scholarship
Stuart L. Saikkonen Memorial Scholarship
Janet R. Salitan Liberal Arts Scholarship
Esther G. Sanders Scholarship
Nelson & Celeste Sanford Memorial Scholarship
Elizabeth Dunlap Sargent Memorial Endowed Scholarship
  Fund at NTID
Ryoichi Sasakawa Endowed Scholarship Fund
E. Phillip Saunders Business Scholarship
E. Phillip Saunders COB Class Gift Scholarship
Robert J. Scheiber Memorial Scholarship
Paul & Katherine Schmidt Scholarship
Robert Pitman Schmidt Scholarship
Kilian & Caroline Schmitt International Scholarship
William J. Schmitt Memorial Scholarship
Martin L. Schultz Memorial Scholarship
Ruth S. Schumacher Fund
Marlene E. Scott Memorial Scholarship
Scripps-Howard Endowed Scholarships
James Scudder Memorial Scholarship
Wilfrid & Isabel Searjeant Scholarship Endowment
Norman C. and Mercedes S. Selke Scholarship
Eric Senna Scholarship
Sarah Shelton Scholarship
Helen Monar Short Scholarship
Igor Shot Scholarship
F. Ritter Shumway Scholarship
S. Richard Silverman Endowed
  Scholarship Fund for International Deaf Students
Fred Simmons Scholarship
Albert J. Simone Entrepreneurship Scholarship
Albert & Carolie Simone Margaret's House Scholarship
Albert & Carolie Simone NRS Scholarship
Louis & Nellie Skalny Scholarship
Edythe & Edward Sklar Endowed Scholarship Fund
Joseph & Deidre Smialowski Honors Scholarship
Susan Smigel International Student Scholarship
David Alan Smith Endowed Scholarship
David Alan Smith Engineering and Entrepreneurship Scholarship
Dr. Fred W. Smith Endowed Scholarship

Kevin Smith Memorial Award
Sidney Smith Family Endowed Scholarship
Southwest Printing Management Fund
C. Sherwood Southwick Jr. Endowed Scholarship
Harry Speck Scholarship
Karl Sperber Scholarship
Sprint Scholarship Fund @ NTID
Alfred L. Stern Fund
Hattie M. Strong Scholarship
Pearl Hewlett Stutz Scholarship
Matthew Sullivan Memorial Scholarship
Solon E. Summerfield Foundation Endowed Scholarship Fund
William Swart Award
Michael A. Swartzman Memorial Endowed Scholarship Fund
David F. Sykes Endowed Scholarship
Peter H. Sykes Endowed Scholarship
George Tanzer Memorial Scholarship
Daniel D. Tessoni Endowed Scholarship
Theta Xi Alumni Greek Organizations Award
Michael Thomas Endowed Scholarship Fund in
   the Performing Arts
Eloise Thornberry Endowed Scholarship Fund
Louis C. Tiffany Foundation
Times Mirror Foundation Scholarship
Erik Timmerman Scholarship
Hollis Todd Scholarship
Kenneth & Barbara Tornvall
Kate Louise Trahey Scholarship
Donald and Christina Truesdale Endowed Scholarship
Fred Tucker Endowed Scholarship
Clarence Tuites Scholarship
Dr. Ibrahim Renan Turkman Scholarship
Turri & Brown Scholarship
Raymond Tyson-Flyn Memorial Scholarship
Clifford & Ruth Ulp Memorial Scholarship
United Way Child Care Scholarship
Walter Vanderwheel Memorial Scholarship
Elizabeth VanHorne Memorial Scholarship
James Ventimiglia Memorial Printing Award
Volpe Scholars Annual Fund
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Joseph Waldinsperger Scholarship
Dewitt Wallace Scholarship
A. Stephen Walls Scholarship
Walls, Olsen Memorial Scholarship
Stephanie Warren Scholarship for Excellence in Emergency
   Medicine
J. Watumul Indian Scholarship
Kathleen Wayland-Smith Scholarship
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Edwin Welter Fund
Western New York Village Superintendents Scholarship
Weyerhaeuser Fellowship
Nelson Whitaker Scholarship

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Becky Wills Scholarship
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Wallace & Paula Wilson Scholarship
John J. Wittman II Scholarship
Henry Wolf Scholarship Endowment
Joseph C. & Loretta F. Wolf Endowed Scholarship Fund
Louis S. and Molly B. Wolk Foundation Endowed Scholarship
   Fund for Deaf Students at RIT
Rose Wollner Scholarship
Rudolph Wollner Scholarship
Women's Club of Rochester Endowed NTID Scholarship
Women's Council Endowed NTID Scholarship
William D. Wright Scholarship
Xerox Endowed Scholarship
Myles G. Yerdin Endowed Memorial Scholarship
Richard and Lois Zakia Scholarship
Jeffrey W. Zielasko Memorial Scholarship
Donald Zrebiec Scholarship

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Rochester Institute of Technology
2011–12 University Calendar

Fall Quarter (20111)

April 19-September 5, 2011
Fall registration

September 5
Day, evening, and online classes begin

September 10
Saturday classes begin

September 11
Last day to add/drop courses

September 12
First day to withdraw online via SIS; receive a "W" grade

October 28
Last day to withdraw online with a "W" grade

November 11
Last day and evening classes

November 12
Last Saturday and online classes

November 14, 15, 16, 17, 18, 19*
Final exams

November 20-27
Fall/Winter break

November 24-25
Thanksgiving
(University closed)

Winter Quarter (20112)

October 18-November 28, 2011
Winter registration

November 28
Day, evening, and online classes begin

December 3
Saturday classes begin

December 4
Last day to add/drop courses

December 5
First day to withdraw online via SIS; receive a "W" grade

December 16
Last day and evening classes before break

December 17
Last Saturday and online classes before break

December 18, 2011–January 2, 2012
Holiday break

December 25, 2011–January 2, 2012
(University closed)

January 3
University re-opens

January 9
Day, evening, and online classes resume

January 14
Saturday classes resume

February 10
Last day to withdraw online with a "W" grade

February 24
Last day and evening classes

February 25
Last Saturday and online classes

February 27, 28, 29, March 1, 2, 3*
Final exams

March 4- March 11
Winter/Spring break

Spring Quarter (20113)

January 24-March 12, 2012
Spring registration

March 12
Day, evening, and online classes begin

March 17
Saturday classes begin

March 18
Last day to add/drop courses

March 19
First day to withdraw online via SIS; receive a "W" grade

May 4
Last day to withdraw online with a "W" grade

May 18
Last day and evening classes

May 19
Last Saturday and online classes

May 21, 22, 23, 24, 25*
Final exams

May 25
Academic Convocation and Commencement Ceremonies

May 26
Commencement Ceremonies

May 27-June 3
Spring/Summer break

May 28
Memorial Day
(University closed)

Summer Quarter (20114)

April 16-June 4, 2012
Summer quarter registration

June 4
Day, evening, and online classes begin

June 9
Saturday classes begin

June 10
Last day to add/drop summer courses

June 11
First day to withdraw online via SIS; receive a "W" grade

July 4
Independence Day
(University closed)

July 27
Last day to withdraw online with a "W" grade
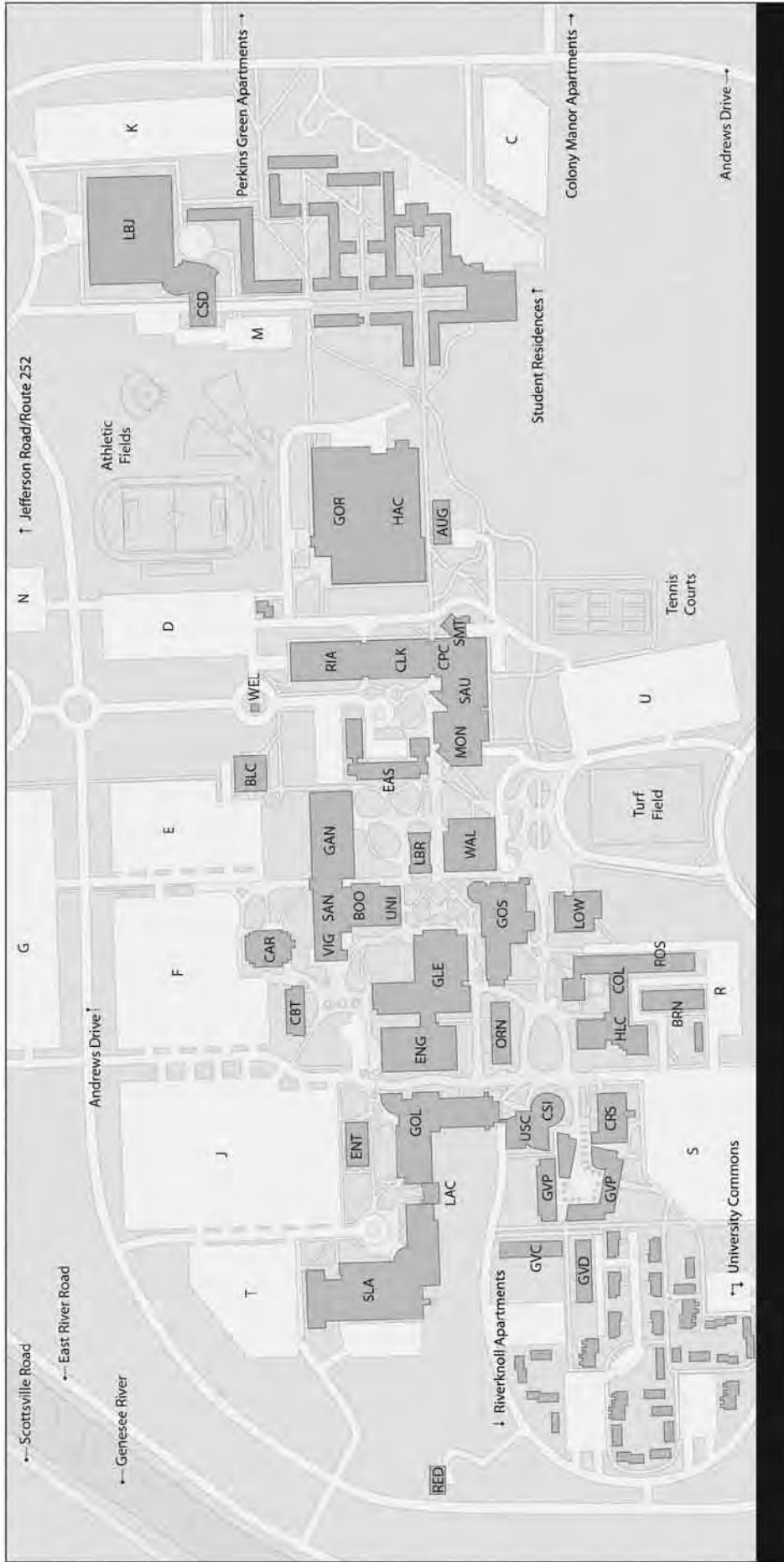
August 10
Last day and evening classes

August 11
Last Saturday and online classes

August 13, 14, 15, 16, 18*
Final exams

* *Day students can view their individual exam schedules online through SIS. Others can view the complete exam schedule at infocenter.rit.edu by selecting Exam Schedule in the public box. Students attending evening, Saturday and on-line courses should check with their instructors regarding their final exam schedules.*

† *Check Academic Planning at infocenter.rit.edu for summer short session (1-5 week) course dates.*

RIT CAMPUS MAP