

# Rochester Institute of Technology

## 2009–10 University Calendar

### Fall Quarter (20091)

**April 21–September 7, 2009**

Fall registration

**September 7**

Day, evening, and online classes begin

**September 12**

Saturday classes begin

**September 13**

Last day to add/drop courses

**September 14**

First day to withdraw online via SIS; receive a “W” grade

**October 30**

Last day to withdraw online with a “W” grade

**November 13**

Last day classes

**November 16, 17, 18, 19, 20**

Final exams—day classes

**November 20**

Last evening classes

**November 21**

Last Saturday and online classes

**November 22-29**

Fall/Winter break

**November 26-28**

University closed

### Winter Quarter (20092)

**October 20–November 30, 2009**

Winter registration

**November 30**

Day, evening, and online classes begin

**December 5**

Saturday classes begin

**December 6**

Last day to add/drop courses

**December 7**

First day to withdraw online via SIS; receive a “W” grade

**December 18**

Last day and evening classes before break

**December 19**

Last Saturday and online classes before break

**December 20–January 3, 2010**

Holiday break

**December 25–January 3, 2010**

University closed

**January 4**

Day, evening, and online classes resume

**January 9**

Saturday classes resume

**February 5**

Last day to withdraw online with a “W” grade

**February 19**

Last day classes

**February 22, 23, 24, 25, 26**

Final exams—day classes

**February 26**

Last evening classes

**February 27**

Last Saturday and online classes

**February 28–March 7**

Winter/Spring break

### Spring Quarter (20093)

**January 26–March 8, 2010**

Spring registration

**March 8**

Day, evening, and online classes begin

**March 13**

Saturday classes begin

**March 14**

Last day to add/drop courses

**March 15**

First day to withdraw online via SIS; receive a “W” grade

**April 30**

Last day to withdraw online with a “W” grade

**May 14**

Last day classes

**May 15**

Last Saturday classes

**May 17, 18, 19, 20, 21**

Final exams—day classes

**May 21**

Last evening and online classes

**May 21**

Academic Convocation  
Commencement Ceremonies

**May 22**

Commencement Ceremonies

**May 23–June 6**

Spring/Summer break

**May 31**

Memorial Day-University closed

### Summer Quarter (20094)

**April 13–June 7, 2010**

Summer registration

**June 7**

Day, evening, and online classes begin

**June 12**

Saturday classes begin

**June 13**

Last day to add/drop summer courses

**June 14**

First day to withdraw online via SIS; receive a “W” grade

**July 5**

Independence Day-University closed

**July 30**

Last day to withdraw online with a “W” grade

**August 13**

Last day classes

**August 16, 17, 18, 19**

Final exams—day classes

**August 20**

Last evening classes

**August 21**

Last Saturday and online classes

*\* Refer to the 2009-10 Registration Guide for specific registration dates and times, or the Student Information System (SIS) at <http://infocenter.rit.edu>.*



## 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 2009–10 academic year. The purpose of this bulletin is to provide students with a comprehensive source of information to use in planning their undergraduate education. Master’s and doctoral degree programs, plus other post-baccalaureate offerings, are described in RIT’s Graduate Bulletin, available through the Office of Graduate Enrollment Services.

The RIT 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.

RIT Undergraduate Bulletin 2009–10  
©Copyright 2009, Rochester Institute of Technology  
All rights reserved

Produced by the Office of University Publications  
Division of Enrollment Management Services and  
Career Services

This material was produced, in part, through an agreement between Rochester Institute of Technology and the United States Department of Education. For more information concerning undergraduate study at RIT, contact:

### Rochester Institute of Technology

Undergraduate Admissions Office  
Bausch & Lomb Center  
60 Lomb Memorial Drive  
Rochester, N.Y. 14623-5604  
admissions@rit.edu  
(585) 475-6631  
www.rit.edu/admissions

## Table of Contents

---

Institute Calendar	2
An Introduction to RIT	4
Academic Programs of Study (HEGIS Chart)	7
College of Applied Science and Technology	11
E. Philip Saunders College of Business	41
B. Thomas Golisano College of Computing and Information Sciences	47
Kate Gleason College of Engineering	59
College of Imaging Arts and Sciences	75
College of Liberal Arts	93
College of Science	110
National Technical Institute for the Deaf	130
Course Descriptions	160
Graduation Requirements	161
Minors	175
Academic Enrichment	205
Academic Policies and Procedures	209
Student Services	212
The RIT Community	223
Undergraduate Admission	236
University Costs/Charges	242
Financial Aid and Scholarships	245
The Rochester Community	255
Trustees, Administration, and Faculty	257
Directory/Frequently Used Numbers	282
Index	283
Map	inside back cover

*RIT will admit and hire men and women; veterans; persons with disabilities; and individuals of any race, creed, religion, color, national or ethnic origin, sexual orientation, age, or marital status in compliance with all appropriate legislation.*

©2009 Rochester Institute of Technology. Photos by Shawn Dowd/Democrat & Chronicle, Ken Huth, John Myers, Jan Regan, and Max Schulte/Democrat & Chronicle.

# 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 eight colleges 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 12,130 full-time undergraduate students, 1,725 part-time undergraduate students, and 2,625 graduate students attend RIT. More than 106,000 RIT 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 students include 1,200 deaf

students, and deaf and hearing students often 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 3,500 students in co-op work positions with approximately 1,800 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.”

## Colleges

---

The **College of Applied Science and Technology** offers bachelor of science programs in civil engineering technology; electrical, computer, and telecommunications engineering technology; manufacturing and mechanical engineering technology; electrical-mechanical engineering technology; safety technology; nutrition; hospitality and service management; packaging science; environmental management; and applied arts and sciences. 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, on Saturdays, and by online learning. Many of the college’s programs are also offered as master’s degrees. Associate degrees, diplomas, and certificates are offered in several areas and are especially appropriate for part-time adult students looking for convenience, quality, and practicality. The Society of Manufacturing Engineers has recognized the manufacturing engineering technology program as one of the top five in the nation.

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 AAS, 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 chemical, computer, electrical, industrial, mechanical, and microelectronic engineering. The college expects to launch a BS degree in biomedical engineering in the fall of 2010 (subject to state approval). Specialized degree options also are offered for students interested in areas such as ergonomics, information systems, software, energy and the environment, sustainability, manufacturing, aerospace, automotive, and biomedical engineering. For those who need time to decide on a particular major, the college also offers an engineering exploration program in the first year. Starting in their third year, students in all engineering programs are required to participate in the cooperative education program. A number of accelerated dual degree options (combined BS/MS degrees) are available in all departments. Recognized as one of the premier colleges of engineering dedicated to undergraduate teaching and cooperative education, the college also offers the nation's only doctoral program in microsystems engineering.

The **College of Imaging Arts and Sciences** includes the schools of Art, Design, American Crafts, 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. Undergraduate degrees include the associate, bachelor of fine arts, and bachelor of science. 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, cultural resource studies, economics, international studies, journalism, professional and technical communication,

philosophy, 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 **National Technical Institute for the Deaf** provides technical and professional programs for approximately 700 deaf and hard-of-hearing students enrolled in associate degree programs. The college also provides extensive educational access services for approximately 500 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 easy transfer into RIT's baccalaureate programs. Students choose from a variety of associate degree options/concentrations in accounting technology, administrative support technology, applied computer technology, applied mechanical technology, arts and imaging studies, automation technologies, 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, medical sciences including physician assistant, biotechnology, bioinformatics, biomedical science, polymer chemistry, and other unique programs. A general science exploration option is popular with students who want more time to decide on their major. The premedical core is a set of courses required for admission to most medical, dental, and veterinary schools. Many of the college's bachelor of science degree programs offer an optional cooperative education program. The college awards associate, bachelor of science, and master of science degrees. Doctoral degrees are awarded in astrophysical sciences and technology, color science, and imaging science.

## University Studies

---

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. This is RIT's broadest and most flexible option. It allows students up to a year to explore more than 90 bachelor's degree programs while they take courses that focus their academic and career interests. University Studies students interact with faculty and are assisted by, and work individually with, experienced advisers who make suggestions on course work and help to narrow each student's focus on a degree program and career path.

## Undeclared Options

---

For those students who know their interests fall within a specific college, such as engineering, liberal arts, or science, but are unsure of a specific major, many colleges offer undeclared options. These college-based options help students discover more about their specific interests while they explore the majors offered by the college.

### Undeclared Engineering Technology

For students interested in one of the engineering technology or packaging science programs, but unsure about selecting a specific program, the undeclared engineering technology option, in the College of Applied Science and Technology, is a solid place to begin. This option allows students to spend up to a year exploring the various engineering technology and packaging science programs while earning course credit that can be applied to any of the programs. By the spring quarter of the first year, students will be asked to select a program of study.

### Applied Arts and Science degree

The applied arts and science degree program in the College of Applied Science and Technology offers students the opportunity to create personalized degree programs directly related to their interests and aspirations. This option provides students with a multidisciplinary approach to learning that can be applied to the professional environment. Through this flexible, multidisciplinary program, students follow a plan of study tailored to their individual interests that incorporates courses or sets of courses from across RIT.

### Undeclared Business

If a student's interests fall into the business realm, the undeclared business option in the Saunders College of Business is the 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 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.

### Engineering Exploration

The engineering exploration program is an option for students who prefer additional time in which to decide on an engineering major in the Kate Gleason College of Engineering. Students may choose a major at the end of the fall, winter, or spring quarter of their first year. During the first year, students take the foundation courses required by all the engineering disciplines as well as a one-credit course, Introduction to Engineering. This course provides an overview to all six 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 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.

### Undeclared Art and Design and Undeclared Crafts

If students have a passion for the visual arts, then they may consider the undeclared art and design or the undeclared crafts options 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](https://admissions.rit.edu).

### Liberal Arts Exploration

If a student's interests are found in the liberal arts, the liberal arts exploration option is a great place to begin. By building on the core liberal arts as well as other general education core components, this option provides students up to a year to declare a major. During this time, students complete required courses that serve as a foundation for each of the programs in the College of Liberal Arts. Advisers are available to assist in selecting a major that matches each student's interests and career goals.

### General Science Exploration (Undeclared Science)

The general science exploration program is an excellent place to start if students have a strong interest in science, mathematics and statistics, or medical science careers, but would like some time to explore the programs available in the College of Science. A customized schedule of courses in science and mathematics is developed based on the student's ability, interests, and goals. A team of academic advisers, representing each department in the college, assists each student in selecting courses and identifying a major in which to enroll. In addition to the traditional science options of biology, chemistry, physics, and math, students may explore courses in environmental science, imaging science, or the medical sciences. Students may decide on a major before the end of the first year or may delay the decision until the end of the second year of study.

# Academic Programs of Study

Undergraduate Programs	College	Degree and HEGIS*						Evening Option	Online Option
		Certificate	Diploma	AOS	AS	AAS	BFA		
Accounting Technology	NTID		5002			5002			
Administrative Support Technology	NTID		5005			5005			
Advertising and Public Relations	COLA							0604	
Applied Arts and Science	CAST		5699			5699		5699	Y Y
Applied Computer Technology	NTID		5101	5101	0799	5101			
Applied Mechanical Technology	NTID					5315			
Applied Networking and System Administration	GCCIS							0702	Y
Applied Optical Technology <sup>‡</sup>	NTID			5212		5212			
Art and Computer Design <sup>†</sup>	NTID			5012		5012			
Arts and Imaging Studies	NTID			5012		5012			
ASL-English Interpretation	NTID					5506		1199	
Automation Technologies	NTID			5399		5399			
Biochemistry <sup>#</sup>	COS							0414	
Bioinformatics <sup>#</sup>	COS							0499	
Biology	COS				5604			0401	
Biomedical Photographic Communications	CIAS					5299		1217	
Biotechnology	COS				§			0499	
Business	NTID				5001				
Business Administration:									
Accounting	COB							0502	
Business Administration	CAST					5001			Y
Consumer Finance	COB							0504	
Finance	COB							0504	
International Business	COB							0513	
Management	COB							0506	Y
Management Information Systems	COB							0599	
Marketing	COB							0509	
New Media Marketing	COB							0509	
Business Technology	NTID			5004					
Ceramics and Ceramic Sculpture	CIAS					5610	1009		

Undergraduate Programs	Degree and HEGIS*								Evening Option	Online Option
	College	Certificate	Diploma	AOS	AS	AAS	BFA	BS		
Chemistry <sup>#</sup>	COS				5619			1905	Y	
Communication, Technical:										Y
Basic	CAST	5008							Y	Y
Advanced	CAST	5008							Y	Y
Communication, Professional and Technical	COLA							0601		
Communications, Public Relations:										Y
Graphic Communication	CAST	5008							Y	
Professional Writing	CAST	5008								Y
Computer-Aided Drafting Technology	NTID		5303	5303		5303				
Computer-Integrated Machining Technology	NTID		5312	5312						
Computer Science <sup>#</sup>	GCCIS							0701	Y	
Craft Major, Double**	CIAS						1009			
Criminal Justice	COLA							2105		
Cultural Resource Studies	COLA							1099		
Deaf Studies <sup>†</sup>	NTID	5506							Y	
Deaf Studies/American Sign Language	NTID	5506								
Design:										
3D Digital Graphics	CIAS							1009		
Graphic	CIAS					5012	1009			
Industrial	CIAS							1009		
Interior	CIAS							1009		
Diagnostic Medical Sonography	COS	5299			§			1299		
Digital Cinema	CIAS							1010		
Digital Imaging and Publishing Technology <sup>†</sup>	NTID		5007	5007		5007				
Disaster and Emergency Management	CAST	5508								Y
E-Business	CAST	5001							Y	Y
Echocardiography	COS	5217								
Economics	COLA							2204		
Engineering:										
Chemical Engineering	COE							0906		
Computer Engineering <sup>#</sup>	COE							0999		
Electrical Engineering <sup>#</sup>	COE							0909		
Industrial Engineering <sup>#</sup>	COE							0913		
Mechanical Engineering <sup>#</sup>	COE							0910		
Mechanical Engineering Science Technology and Public Policy	COE/ COLA							0910		
Microelectronic Engineering <sup>#</sup>	COE							0999		



Undergraduate Programs	College	Certificate	Diploma	Degree and HEGIS*					Evening Option	Online Option
				AOS	AS	AAS	BFA	BS		
Engineering Science	COE				5609				Y	
Engineering Technology:										Y
Civil Engineering Technology	CAST							0925		
Computer Engineering Technology	CAST							0925	Y	
Electrical Engineering Technology	CAST							0925	Y	
Electrical/Mechanical Engineering Technology <sup>#</sup>	CAST							0925	Y	Y
Electrical Technology	CAST					5310			Y	
Manufacturing Engineering Technology (CIM) <sup>#</sup>	CAST							0925	Y	
Mechanical Engineering Technology	CAST							0925	Y	
Mechanical Technology	CAST	5301					5315		Y	
Telecommunications Engineering Technology <sup>#</sup>	CAST							0925		Y
Environmental Management and Technology	CAST							0420	Y	
Environmental Science <sup>#</sup>	COS							0420		
Exercise Science	COS	5299.3								
Film/Video/Animation	CIAS						5008	1010		
Fine and Applied Arts	CIAS		5012						Y	
Fine Arts Studio	CIAS						5610	1002		
Game Design and Development	GCCIS							0799		
General Management	CAST						5004		Y	
Glass and Glass Sculpture	CIAS						5012	1009		
Graphic Communications <sup>+</sup>	CIAS							0699		
Graphic Media	CIAS							0699		
Health Systems Administration	CAST	5299							Y	Y
Hospitality and Service Management	CAST						5011.10	0510.10		
Hospitality and Service Management	NTID					5011				
Human Resource Administration	CAST						5004		Y	
Illustration	CIAS						5610	1002		
Imaging and Photographic Technology	CIAS						5007	1011		
Imaging Science	COS							1999.20		
Information Security and Forensics	GCCIS							0799		
Information Technology	GCCIS						5101	0699	Y	
International Studies	COLA							2210		
Journalism	COLA							0604		
Laboratory Science Technology	NTID				5407		5407			
Management Development	CAST	5004	5004						Y	
Mathematics:										



Undergraduate Programs	College	Certificate	Diploma	Degree and HEGIS*					Evening Option	Online Option
				AOS	AS	AAS	BFA	BS		
Applied Mathematics <sup>#</sup>	COS				5617			1703		
Computational Mathematics <sup>#</sup>	COS							1703		
Medical Illustration	CIAS						1299			
Medical Informatics <sup>#</sup>	GCCIS							1217		
Metals and Jewelry Design	CIAS					5012	1009			
New Media:										
New Media Interactive Development	GCCIS							0699		
New Media–Design and Imaging	CIAS						0605			
New Media–Publishing	CIAS							0605		
Nutrition Management	CAST					5404		1306		
Organizational Development:										
Human Resource Development	CAST	5004							Y	
Organizational Change and Leadership	CAST	5004							Y	
Packaging Science	CAST							4999		
Performing Arts	NTID	5610								
Philosophy	COLA							1509		
Photographic Illustration, Professional	CIAS					5007	1011			
Physician Assistant	COS							1299.10		
Physics <sup>#</sup>	COS				5619			1902		
Polymer Chemistry <sup>#</sup>	COS							1907		
Psychology	COLA							2001		
Public Policy <sup>#</sup>	COLA							2102		
Quality, Basic	CAST	5004								Y
Quality Implementation	CAST	5004								Y
Quality Management	CAST	5004								
Safety Technology	CAST	5312						0420		Y
Small Business Management	CAST	5004							Y	
Software Engineering	GCCIS							0999		
Statistics, Applied <sup>#</sup>	COS							1702		
Structural Design	CAST	5399								Y
Urban and Community Studies	COLA							2214.00		
Visual Media	CIAS						1009			
Woodworking and Furniture Design	CIAS			5317		5012	1009			

\*Source: Higher Education General Information Survey.

\*\* Upon approval of the School for American Crafts.

§ Students in these programs may receive an AS in general science (HEGIS #5649) upon successful completion of the first two years.

# Accelerated dual degree (BS/MS) option available

† This program has been approved for discontinuance. No new students will be admitted in 2009-10.

‡ This program has been suspended. No new students will be admitted in 2009-10.

# College of Applied Science and Technology

**H. Fred Walker, Dean**

[www.rit.edu/cast](http://www.rit.edu/cast)

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 proper 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 associate, baccalaureate, and master's degree levels, and a wide array of diplomas and certificates is offered in a variety of programs. 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).

## Facilities and resources

The college opened a new building in April 2008. This latest addition to the campus is RIT's first green building. It was designed to meet the standards of the Leadership in Energy and Environmental Design (LEED) rating system. The building is a living laboratory available for demonstrations and experimentation in green technologies. It 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 OSHA Training Center; the department of civil engineering technology/environmental management and safety; the department of electrical, computer, and telecommunications engineering technology; and advising and faculty offices and laboratories.

An adjacent building houses additional 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 (CIMS), 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, is part of the School of Hospitality and Service Management, and contains some of the most sophisticated service equipment 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. Information laboratories provide data that enable students to assess the supply and demand for food commodities throughout the world.

## Admission requirements

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

## Faculty

Faculty members in the College of Applied Science and Technology 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 their primary concern, they also serve as active industrial consultants and researchers who maintain current knowledge in their fields. They are committed to student growth and development.

## 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. RIT's 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. With a prearranged appointment, part-time students will find advisers available during the evening. Each of these advisers will also help identify appropriate RIT support services for specific student needs.

## Engineering Technology

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

## Degree programs

The engineering technology department offers bachelor of science degrees in:

- civil engineering technology
- computer engineering technology
- electrical engineering technology
- electrical/mechanical engineering technology
- manufacturing engineering technology
- mechanical engineering technology
- telecommunications engineering technology

The upper division of these programs is designed to accept graduates from associate degree programs in similar engineering technology fields and to provide continued study in the student's specialization. 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 fit 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 BS 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. The upper-division programs in electrical/mechanical and telecommunications engineering technology are also offered through online learning.

The requirements for part-time study and for graduation are the same as 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.

These programs allow students with full-time jobs to obtain an AAS degree on a part-time basis. Certificate programs are available during the evening and through online learning. Information on part-time, evening, online, and certificate programs is available. 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/](http://www.rit.edu/emcs/ptgrad/).

## Accreditation

The following baccalaureate degree programs are accredited by the Technology Accreditation Commission of the ABET, 1 Market Place, Suite 1050, Baltimore, Maryland 21202, (410) 347-7700: civil engineering technology, computer engineering technology, electrical engineering technology, electrical/mechanical engineering technology, manufacturing engineering technology, mechanical engineering technology, and telecommunications engineering technology. The technology associate programs have been designed to facilitate easy transfer for students to the BS programs. Students enrolled in the technology associate degree programs may transfer all of their credits to the TAC of ABET-accredited bachelor of science degree program in the appropriate field.

## Cooperative Education

An integral and significant part of each engineering technology program is work experience gained through RIT's cooperative education program. Co-op involves alternating periods of study on campus with full-time, paid work experience in industry. A typical co-op schedule for engineering technology programs is in the next column.

Typical co-op schedule for engineering technology programs

Year	Fall	Winter	Spring	Summer
1 and 2	RIT	RIT	RIT	—
3	RIT	RIT	Co-op	Co-op
4	RIT	Co-op	RIT	Co-op
5	Co-op	RIT	RIT	—

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. RIT's Office of Cooperative Education and Career Services can assist students in obtaining co-op positions that relate to their career goals.

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 in an engineering technology program on a part-time basis 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.

## Undeclared Engineering Technology Option

**Elizabeth Dell, Undeclared Program Coordinator**

[www.rit.edu/cast/mmetps/](http://www.rit.edu/cast/mmetps/)

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. 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 to enter RIT in 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 year course sequence

	Qtr. Cr. Hrs.		
<b>Fall Quarter</b>	Liberal Arts*	4	
	Solid Modeling and Design 0617-262	4	
	ExCiTe Introduction to ECT ET 0618-213	4	
	Precalculus 1016-230 or Math Sequence	4	
	Engineering Technology Seminar 0606-101	2	
	First-Year Enrichment 1105-051	1	
<b>Winter Quarter</b>	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	
	First-Year Enrichment 1105-052	1	
	Calculus for Engineering Technology 1016-231 or Math Sequence	4	
	Two courses from selected option (with adviser approval)	8	
	<b>Spring Quarter</b>	Calculus for Engineering Technology II 1016-232 or Math sequence	4
		Liberal Arts*	4
Two courses within option selected (with adviser approval)		8	
<b>Total Quarter Credit Hours</b>		<b>52</b>	

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

## Civil Engineering Technology

**John Morelli, Department Chair**  
**Scott B. Wolcott, Undergraduate Coordinator**

[www.rit.edu/cast/cetems/](http://www.rit.edu/cast/cetems/)

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.

The program is accredited by the Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Maryland 21202, (410) 347-7700, and is operated as a cooperative education program.

## 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.

## Admission requirements

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

Graduates of two-year associate degree programs may apply for admission. Course work should have included technical math (two semesters of college-level math with an introduction to calculus), drafting (including CAD), technical physics (two semesters), soil mechanics, plane surveying, route surveying, statics (mechanics), strength of materials, and methods and materials of construction. Students lacking this course work may be admitted to the program, but may be required to complete additional course work.

Normally, an associate degree in science is acceptable from an engineering transfer program, and students take courses they lack concurrently in the program. Typically these students graduate in the same six academic quarters as an engineering technology transfer student.

## 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

	Qtr. Cr. Hrs.	
<b>First Year</b>	Introduction to Civil Engineering Technology 0608-051	1
	Precalculus 1016-230	4
	Engineering Graphics with CAD 0608-211	4
	Materials of Construction 0608-330	4
	Calculus for Engineering Tech I 1016-231	4
	College Physics I, II, Lab 1017-211, 212, 271, 272	8
	Problem Solving and Communication with Computers 0608-225	2
	Introduction to Statics 0610-302	4
	Civil Engineering Graphics 0608-220	4
	Liberal Arts*	16
	Wellness Education†	1
	First-Year Enrichment 1105-051, 052	2

<b>Second Year</b>	College Physics III, Lab 1017-213, 273	4
	Plane Surveying 0608-320	4
	Effective Technical Communication 0535-403	4
	Strength of Materials 0610-303	4
	Elementary Soil Mechanics 0608-360	4
	Elements of Building Construction 0608-422	4
	Calculus for Engineering Technology II 1016-232	4
	Route Surveying 0608-340	4
	Elementary Structures 0608-380	4
	Differential Equations for Engineering Tech 1016-304	4
	Liberal Arts*	8
	Wellness Education†	0
	<b>Third Year</b>	Introduction to Civil Engineering Technology, Transfer 0608-199
Hydraulics, Lab (or Technical Elective) 0608-420, 421		4
Structural Loads and Systems 0608-304		2
Land Development Computer Applications 0608-303		2
Math Elective		4
Structural Computer Applications 0608-305		2
Applied Mechanics of Materials 0608-404		4
Technical Elective		2
Fundamentals of Chemistry 1011-271		3
Chemistry I Lab 1011-205		1
Liberal Arts*		8
Co-op Preparation 0606-099		0
Cooperative Education (2 quarters)		Co-op
<b>Fourth Year</b>	Water and Wastewater Transport Systems 0608-432	2
	Structural Analysis 0608-490	4
	Chemistry of Water and Wastewater, Lab 1011-272, 276	4
	Technical Elective	8
	Principles of Water and Wastewater Treatment 0608-438	4
	Structural Design 0608-496 or 0608-497	4
	Soil Mechanics and Foundations, Lab 0608-527, 528	4
	Professional Principles and Practices 0608-546	1
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
<b>Fifth Year</b>	Transportation Engineering 0608-530	4
	Free Electives	12
	Technology Electronics 1017-359	4
	Engineering Economics 0617-436	4
	Principles of Dynamics in Civil Engineering Technology 0608-570	4
	Liberal Arts*	4
	Cooperative Education (1 quarter)	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.

The program shown is that which would be taken by those who start at RIT as freshmen. Each transfer student will be given a program tailored to his or her particular needs upon acceptance. Graduates will have to meet a minimum of 36 quarter credit hours of mathematics and science (including credits transferred) and include Mathematics (1016-304) or equivalent.

## 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.

	Qtr. Cr. Hrs.
<b>Water Resources</b>	
0608-482 Hydrology	4
0608-485 Hydraulic Structures	4
0608-480 Groundwater Hydraulics	4
<b>Environmental Controls</b>	
0608-510 Design of Water Treatment Facilities	2
0608-514 Land Use Planning	4
0608-511 Design of Wastewater Facilities	2

0608-525 Resource Recovery/Waste Management	4
<b>Construction Management</b>	
0608-500 Labor Relations	2
0608-509 Cost Estimating	4
0608-560 Construction Project Management	4
0608-544 Contracts and Specifications	2
<b>Structures</b>	
0608-470 Timber Design	4
0608-496 Reinforced Concrete Design	4
0608-497 Structural Steel Design	4
<b>Building and Heavy Construction</b>	
0608-460 Construction Equipment	2
0608-505 Construction Safety	2
0608-535 Pavement Design	4
0608-444 Mechanical Equipment	2
<b>Other Electives</b>	
1016-319 Data Analysis	4
0610-440 Applied Thermodynamics	4
0630-370, 372 Environmental Geology, Lab	4

## Structural Design Certificate

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 4-quarter-credit-hour courses. The program is offered on campus and online.

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 and employed in a design environment.

Admission requirements include an official transcript from all previous institutions of higher education indicating the successful completion of the courses equivalent to the program’s prerequisites.

### Certificate courses

	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
<b>Total Quarter Credit Hours</b>	<b>20</b>

## Electrical Engineering Technology

**Michael Eastman, Department Chair**

**Steven M. Ciccarelli, Program Chair**

[www.rit.edu/cast/ect](http://www.rit.edu/cast/ect)

The bachelor of science program 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.

## 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 by visiting the department website, [www.rit.edu/ect](http://www.rit.edu/ect).

The bachelor of science degree program in electrical engineering technology is accredited by the Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Maryland 21202, (410) 347-7700.

## Admission requirements

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

Graduates of two-year associate degree programs in electrical or electronic engineering technology are encouraged to apply for admission. Students currently enrolled in engineering science associate degree programs also may apply, but may be assigned to a slightly different series of courses. Students from associate degree programs closely related to electrical technology who have appropriate circuits and electronics course levels may also be accepted, but may be required to complete some foundation courses before starting the third year of the program.

### Electrical engineering technology, BS degree, typical course sequence

	Qtr.	Cr. Hrs.
<b>First Year</b>		
ExCiTe Introduction to ECT ET 0618-213		4
Circuit Theory I, II 0609-214, 215		8
Calculus with Foundations I, II 1016-261, 262		8
First-Year Enrichment I, II 1105-051, 052		2
Liberal Arts*		12
Technical Programming I 0618-231		4
College Physics I 1017-211		4
Digital Fundamentals 0618-301		4
Calculus B 1016-272		4
Wellness Education†		0

<b>Second Year</b>	Circuit Theory III 0609-216	4
	Electronics I, II, 0609-360, 361	8
	Liberal Arts*	12
	Machines and Transformers 0609-337	4
	College Physics I, II, III 1017- 212, 213	8
	Calculus C 1016-273	4
	Data Analysis 1016-319	4
	Wellness Education†	0
	Microcomputers 0618-303	4
<b>Third Year</b>	Digital Systems Design I 0618-438	4
	Electronics III, IV 0609-362, 363	8
	Differential Equations for Engineering Technology 1016-304	4
	Public Speaking 0535-501	4
	Career Orientation 0609-407	1
	Technical Writing 0502-444	4
	Electronic Design Automation 0618-439	4
	Concepts in Systems and Signals 0609-333	4
	Cooperative Education (2 quarters)	Co-op
<b>Fourth Year</b>	Free Elective	4
	Liberal Arts*	8
	Digital Signal Processing 0609-547	4
	Advanced Circuit Theory 0609-403	4
	Mechanical/Manufacturing Engineering Technology Elective	4
	Advanced Electronics 0609-442	4
	Transmission Lines 0609-408	4
	Cooperative Education (2 quarters)	Co-op
<b>Fifth Year</b>	Control Systems I 0609-404	4
	Ethics, Economics and Planning for Engineers 0614-440	4
	Professional Electives	8
	Free Electives	8
	Liberal Arts*	4
	General Education Elective	2
	Cooperative Education (1 quarter)	Co-op

### Total Quarter Credit Hours

194

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

†Please see Wellness Education Requirement for more information.

The program shown is that which would be taken by those who start at RIT as freshmen. Each transfer student will be given a program tailored to his or her particular needs upon acceptance. Graduates will have to meet a minimum of 36 quarter credit hours of mathematics and science (including credits transferred) and include Mathematics (1016-304) or equivalent.

## Possible professional electives

Option	Course Title	Prerequisite(s)
<b>Power systems</b>		
0609-550	Power Systems I	0609-337 or 0609-411
0609-552	Power Systems II	0609-550
<b>Communications systems</b>		
0609-534	Communication Systems I	0609-333 and 0609-363
0609-535	Communication Systems II	0609-534
<b>Optics</b>		
0609-554	Electro-optic Devices	0609-362
0614-520	Fiber Optic Telecommunications Technology	1016-304, 1017-212 and (0614-483 or 0609-408)
<b>Embedded systems</b>		
0618-561	Embedded System Design I	0618-438
0618-562	Embedded System Design II	0618-439 and 0618-561
<b>Telecommunications</b>		
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

## Computer Engineering Technology

**Michael Eastman, Department Chair**

[www.rit.edu/cast/ect](http://www.rit.edu/cast/ect)

Embedded systems are at the heart of devices and systems used every day. Computer engineers design embedded systems that are included within 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 employees 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 earn a strong background in cutting-edge development using 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 appreciation 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.

This 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.

The computer engineering technology program is accredited by the Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Maryland 21202, (410) 347-7700.

### Accelerated dual degree option

The computer engineering technology 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.

Graduates of closely allied associate degree programs may apply for transfer. These students complete the requirements for the BS degree in three years, which includes six academic quarters and five quarters of cooperative education. Each qualified transfer student is evaluated on a course-by-course basis and is given a specific program of study that best meets his or her career goals, provides a meaningful cooperative education experience, and permits the student to fulfill the degree requirements in a reasonable period of time.

### Electives

There is a need in the computer industry for professionals with diversified areas of expertise. The computer engineering technology program requires a three-course professional concentration sequence that allows students to customize their education yet ensures depth of knowledge in subject 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  
0614-465/0614-466 Voice Communications Technology  
0614-475 Switching Technologies

#### Communication Systems

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



## Telecommunications Engineering Technology

**Michael Eastman, Department Chair**  
**Warren L. G. Koontz, Program Chair**

[www.rit.edu/cast/ect](http://www.rit.edu/cast/ect)

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 computer 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.

#### Computer engineering technology, BS degree, typical course sequence

	Qtr.	Cr. Hrs.
<b>First Year</b>	First-Year Enrichment 0609-051, 052	2
	Technical Programming I, II 0618-231, 232	4
	Digital Fundamentals 0618-301	4
	ExCiTe Introduction to ECT ET 0618-213	4
	Circuit Theory I, II 0609-214, 215	8
	Calculus with Foundations I, II 1016-261, 262	8
	Calculus B 1016-272	4
	Microcomputers 0618-303	4
	Liberal Arts*	12
	Wellness Education†	0
<b>Second Year</b>	Data Analysis 1016-319	4
	Technical Programming III 0618- 233	8
	Circuit Theory III 0609 216	4
	Electronics I, II 0609-360, 361	8
	College Physics I, II, III 1017-211, 212, 213	12
	Liberal Arts*	12
<b>Third Year</b>	Digital Systems Design I 0618-438	4
	Electronics III 0609 362	4
	Electronic Design Automation 0618-439	4
	Career Orientation 0609-407	1
	Networking Technologies 0614-477	4
	Principles of Optics 1017-320	4
	Differential Equations for Engineering Technology 1016-304	4
	Effective Technical Communication 0535-403	4
	Calculus C 1016-273	4
	Cooperative Education (2 quarters)	Co-op
<b>Fourth Year</b>	Embedded Systems Design I, II 0618-561, 562	8
	Concepts in Systems and Signals 0609-333	4
	Professional Concentration Elective	4
	Advanced Electronics 0609-442	4
	Liberal Arts*	8
	Free Elective	4
	Cooperative Education (2 quarters)	Co-op
<b>Fifth Year</b>	Embedded Systems Design III 0618-563	4
	Professional Concentration Electives	8
	Liberal Arts*	4
	Ethics, Economics, and Planning for Engineers 0614-440	4
	Free Elective	8
	Cooperative Education (1 quarter)	Co-op
<b>Total Quarter Credit Hours</b>		<b>192</b>

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

Since its beginning, the telecommunications industry has driven 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, they 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.

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.

The telecommunications engineering technology program is accredited by the Technology Accreditation Commission of ABET, 1 Market Place, Suite 1050, Baltimore, Maryland 21202, (410) 347-7700.

### 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.

### Admission requirements

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

Transfer students with an associate degree and students from closely related programs, such as telecommunications technology or electrical/electronics technology, can normally expect to graduate in three years, which includes six academic quarters and

five quarters of cooperative education. Graduates of less closely related programs are also welcome to apply but may expect to take longer to complete the program.

**Telecommunications engineering technology, BS degree, typical course sequence**

	Qtr. Cr. Hrs.
<b>First Year</b>	
ECT ET First-Year Enrichment I, II 0609-051, 052	2
Calculus with Foundations I, II 1016-261, 262	8
Calculus B 1016-272	4
ExCiTe Introduction to ECT ET 0618-213	4
Circuit Theory I 0609-214	4
Telecommunications Fundamentals 0614-271	4
Circuit Theory II 0609-215	4
Digital Fundamentals 0618-301	4
Liberal Arts*	12
<b>Second Year</b>	
Electronics I, II 0609-360, 361	8
Circuit Theory III 0609-216	4
Calculus C 1016-273	4
Technical Programming II 0618-232	4
College Physics I, II, III 1017-211, 212, 213	12
Voice Communications Technology 0614-465, 466	4
Liberal Arts*	12
Wellness Education†	0
<b>Third Year</b>	
Differential Equations for Engineering Technology 1016-304	4
Concepts in Signals and Systems 0609-333	4
Networking Technologies 0614-477	4
Electronics III, IV 0609-362, 363	8
Career Orientation 0609-407	1
Effective Technical Communications 0535-403	4
Technical Electives	4
Cooperative Education (2 quarters)	Co-op
Data Analysis I 1016-319	4
<b>Fourth Year</b>	
Introduction to Telecommunications Policy 0614-480	4
Telecommunications Transmission Systems, Lab 0614-483, 484	4
Network Management 0614-479	4
Switching Technologies 0614-475	4
General Education Elective	4
Free Elective	4
Liberal Arts*	8
Cooperative Education (2 quarters)	Co-op
<b>Fifth Year</b>	
Telecommunications Network Engineering, Lab 0614-561, 562	4
Communication Systems I 0609-534	4
Liberal Arts*	4
Free Elective	8
General Education Elective	4
Network Planning and Design 0614-574	4
Ethics, Economics, and Planning for Engineers 0614-440	4
Cooperative Education (1 quarter)	Co-op
<b>Total Quarter Credit Hours</b>	<b>194</b>

\*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**

	Qtr. Cr. Hrs.
<b>First Year</b>	
ECT ET First-Year Enrichment I, II 0609-051, 052	2
ExCiTe Introduction to ECT ET 0618-213	4
Calculus with Foundations I, II 1016-261, 262	8
Data Analysis I 1016-319	4
Circuit Theory I 0609-214	4
College Physics I 1017-211	4
Telecommunications Fundamentals 0614-271	4
Circuit Theory II 0609-215	4
College Physics II 1017-212	3
Digital Fundamentals 0618-301	4
Liberal Arts*	8
<b>Second Year</b>	
Electronics I, II, 0609-360, 361	8
Circuit Theory III 0609-216	4
Calculus B, C 1016-272, 273	8
Technical Programming I, II 0618-231, 232	8
College Physics III 1017-213	4
Voice Communications Technology, Lab 0614-465, 466	4
Liberal Arts*	12
Career Orientation 0609-407	1
Wellness Education†	0
<b>Third Year</b>	
Differential Equations for Engineering Technology 1016-304	4
Concepts in Signals and Systems 0609-333	4
Networking Technologies 0614-477	4
Microcomputers 0618-303	4
Electronics III, IV 0609-362, 363	8
General Education Elective	4
Technical Electives	4
Cooperative Education (2 quarters)	Co-op
<b>Fourth Year</b>	
Telecommunications Policy and Regulation 0614-780	4
Effective Technical Communications 0535-403	4
Telecommunications Transmission Systems 0614-783	4
Network Management 0614-479	4
Switching Technologies 0614-475	4
Technical Electives	8
Free Electives	8
Liberal Arts*	8
Ethics, Economics, and Planning for Engineers 0614-440	4
Cooperative Education (1 quarter)	Co-op
<b>Fifth Year</b>	
Telecommunication Network Engineering 0614-761	4
Telecommunication Systems 0614-764	4
Telecommunication Concepts 0614-720	4
Telecommunication Principles 0614-722	4
Wireless RF Telecommunications Systems 0614-864	4
WAN/LAN Planning and Design 0614-774	4
Graduate Elective	4
Thesis/Project Planning 0614-890	2
Master's Thesis or Project and Elective 0614-892, 893	6
Fiber Optic Telecommunications Tech 0614-732	4
Liberal Arts*	8
Free Elective	4
<b>Total Quarter Credit Hours</b>	<b>230</b>

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

## Manufacturing and Mechanical Engineering Technology/Packaging Science

**Daniel P. Johnson, Chair**

**Thomas Voss, Associate Chair**

[www.rit.edu/cast/mmetps/](http://www.rit.edu/cast/mmetps/)

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

Instructional and research laboratories for all of the programs 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.

## Electrical/Mechanical Engineering Technology

**Michael Parthum, Program Chair**

[www.rit.edu/cast/mmetps/](http://www.rit.edu/cast/mmetps/)

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. The program is accredited by the Technology Accreditation Commission of ABET, 1 Market Place, Suite 1050, Baltimore, Maryland 21202, (410) 347-7700.

### Program goals

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

### 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.

### Admission requirements

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

Students with associate degrees in either electrical or mechanical engineering technology can generally transfer to the upper-division portion of the program with third-year status. Students with other backgrounds usually need additional core course work to achieve third-year status. Transfer students will more closely follow the requirements outlined in the upper-division part-time and online course sequence, since some lower-division courses are replaced by parts of upper-division courses. The actual course sequence will be determined by advisement.

### Evening and online learning program

The upper-division portion of this program may be completed part time during the evening or through online learning. This enables students to complete the program if they are employed full time or if they reside outside Rochester. For online students, there is a different sequence of courses so they can come to RIT only once for a one-week intensive laboratory course in addition to labs that can be completed using kits or the Web. The typical transfer student, with a technical associate degree or equivalent, will be able to complete the part-time program in approximately five years. Many of the program's electives are available online.

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

	Qtr.	Cr. Hrs.
<b>First Year</b>	First-Year Enrichment I, II 1105-051, 052	2
	ExCiTe Introduction to ECT ET 0618-213	4
	Manufacturing Processes 0617-220	4
	Precalculus 1016-230	4
	Solid Modeling and Design 0617-262	4
	College Physics I 1017-211	4
	Calculus for Engineering Technology I, II 1016-231, 232	8
	Liberal Arts*	16
	Digital Fundamentals 0618-301	4
	Introduction to Materials Technology 0610-211	3
	Materials Testing 0610-304	1
<b>Second Year</b>	Introduction to Statics 0610-302	4
	College Physics II, III 1017-212, 213	8
	Differential Equations for Engineering Technology 1016-304	4
	Strength of Materials 0610-303	4
	Data Analysis 1016-319	4
	Telecommunications Fundamentals 06614-271	4
	Electrical Machines and Transformers 0609-337	4
	Electrical Principles I 0609-411	4
	Liberal Arts*	8
	Effective Technical Communications 0535-403	4
	Computers in Mechanical Engineering Technology 0610-432	2
	Wellness Education†	0
	<b>Third Year</b>	College Chemistry 1011-208
Technical Programming I 0618-231		4
Applied Dynamics 0610-405		4
Applied Microprocessors 0609-413		4
Co-op Preparation 0606-099		0
Electric Principles II 0609-412		4
Liberal Arts*		4
Thermal Fluid Sciences I, II 0610-401, 402		5
Mechanical Engineering Technology Lab I 0610-407		2
Wellness Education†		0
Introduction to Chemistry of Materials, Lab 1011-273, 277		4
Cooperative Education (2 quarters)	Co-op	

<b>Fourth Year</b>	Controls for Manufacturing Automation 0617-470	4
	Materials Technology 0610-416	4
	Production and Operations Management I 0617-440	4
	Mechanical Engineering Technology Lab II 0610-409	4
	Cooperative Education (2 quarters) 0610-499	Co-op
	Liberal Arts*	8
	Thermal Fluid Science III 0660-403	3
	Upper-Division Technical Concentration	4
	Technical Programming I 0618-231	4
	<b>Total Quarter Credit Hours</b>	<b>194</b>
<b>Fifth Year</b>	Cooperative Education (1 quarter) 0610-499	Co-op
	Engineering Economics 0617-436	4
	Upper-Division Technical Concentration	7-8
	Free Electives	12
	Liberal Arts*	4
	General Education Elective	2

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

†Please see Wellness Education Requirement for more information.

For the electrical/mechanical engineering technology BS degree upper-division evening and online learning program typical course sequence, please see the Part-Time Undergraduate Studies Guide or Online Studies Guide.

## Manufacturing Engineering Technology

### Scott Anson, Program Chair

[www.rit.edu/cast/mmetps/man.php](http://www.rit.edu/cast/mmetps/man.php)

The present shortage of qualified manufacturing engineers and technologists is between 50,000 and 100,000 people—and the need is increasing. It is also estimated that between 20,000 and 30,000 new jobs are created in manufacturing engineering every year. Industrial productivity and technological innovations are driving this demand.

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, computer-integrated manufacturing, and electronics manufacturing.

The manufacturing engineering technology program is operated on the cooperative education plan and is accredited by the Technology Accreditation Commission of ABET, 1 Market Place, Suite 1050, Baltimore, Maryland 21202, (410) 347-7700.

### Program goal

The goal of the manufacturing engineering technology 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.

### Curriculum

The curriculum has been designed with the aid and consultation of professionals in the field. The program emphasizes computer-integrated manufacturing and product development. Courses cover traditional and nontraditional manufacturing processes, fundamentals of electronics and microprocessors, computer-aid-



ed 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.

### Admission requirements

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

Students transferring from two-year colleges should have an AAS degree or equivalent in one of the following areas: manufacturing technology, mechanical technology, management engineering technology, engineering science, electrical technology, computer technology, quality control technology, design and drafting technology, or electromechanical technology. Students with other backgrounds may need to take additional courses to meet admission requirements.

### Manufacturing engineering technology, BS degree, typical course sequence

	Qtr.	Cr. Hrs.
<b>First Year</b>	Introduction to Materials Technology 0610-211	3
	Materials Testing 0610-304	1
	Manufacturing Processes I 0617-220	4
	Calculus for Engineering Technology 1016-231	4
	First-Year Enrichment 1105-051, 052	2
	Solid Modeling and Design 0617-262	4
	Manufacturing Processes II 0617-420	4
	Calculus for Engineering Technology II 1016-232	4
	Design Dimensioning and Tolerancing 0610-220	4
	Differential Equations for Engineering Technology 1016-304	4
	College Physics I, Lab 1017-211, 271	4
Liberal Arts*	12	
<b>Second Year</b>	Introduction to Statics 0610-302	4
	Pneumatics and Hydraulics 0610-305	4
	Data Analysis I, Lab 1016-319, 379	6
	College Physics II, III, Labs 1017-212, 213, 272, 273	8
	Electrical Principles for Design I 0609-411	4
	Strength of Materials 0610-303	4
	Liberal Arts*	4
	Wellness Education†	0
	Principles of Mechanical Design I 0610-315	4
	Computational Methods for Engineering Technology 0610-309	1
	Ethics Elective	4
	Effective Technical Communication 0535-403	4
	Free Elective	4
<b>Third Year</b>	Cooperative Education Preparation 0606-099	0
	Introduction to Electronics Packaging, Lab 0617-455, 457	5
	Robots in Manufacturing 0617-485	4
	Technical Programming 0618-231	4
	Engineering Economics 0617-436	4
	Computer Numerical Control 0617-471	4
	Chemistry and Chemistry Lab 1011-205, 271	4
	Free Electives	4
	Liberal Arts*	4
	Cooperative Education (2 quarters)	Co-op
	Introduction to Electronic Packaging 0617-455	4
Electronics Packaging Lab 0617-457	1	

<b>Fourth Year</b>	Production and Operations Management I 0617-440	4
	Materials Technology 0610-416	4
	Controls for Manufacturing Automation 0617-470	3
	Production and Operations Management II 0617-441	4
	Liberal Arts*	12
	Mechanical Engineering Technology Lab II 0610-409	2
	Tool Engineering 0617-472	4
	General Elective	4
Cooperative Education (2 quarters)	Co-op	

<b>Fifth Year</b>	Computer-Aided Manufacturing 0617-475	4
	Technical Electives	8
	Process Design 0617-510	4
	Liberal Arts*	12
	Free Elective	4
	Cooperative Education (1 quarter)	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.

### 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

### William Leonard, Program Chair

[www.rit.edu/cast/mmetps/mech.php](http://www.rit.edu/cast/mmetps/mech.php)

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 in this program will study the foundations of mechanics, materials, and energy. They will learn technical skills such as computer-aided design, computer-aided engineering, how to test materials, and how to make parts. Students will 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.

The BS in mechanical engineering technology program is accredited by the Technology Accreditation Commission of ABET, 1 Market Place, Suite 1050, Baltimore, Maryland 21202, (410) 347-7700.

## 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.

## 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.

## Admission requirements

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

Students transferring from two-year colleges should have an AAS degree or equivalent in mechanical technology, design-drafting technology, air-conditioning technology, or engineering science. It is expected that course work in these associate degree programs will be covered: mathematics (through introductory calculus), physics, computer-aided design and drafting, manufacturing processes, statics and strength of materials, computer skills (word processing, data analysis, presentation graphics, equation solving), metallurgy, electric circuits, statistics, and mechanical design.

## 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; or plastics processing. Customized sequences may be developed with department approval.

## Evening program

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 on a part-time basis 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 engineering technology, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Introduction to Materials Technology I 0610-211	3
	Materials Testing 0610-304	1
	Manufacturing Processes I, II 0617-220, 420	8
	Calculus for Engineering Technology 1016-231	4
	First-Year Enrichment 1105-051, 052	2
	Solid Modeling and Design 0617-262	4
	Calculus for Engineering Technology II 1016-232	4
	Design, Dimensioning, and Tolerancing 0610-220	4
	Differential Equations for Engineering Technology 1016-304	4
	College Physics I 1017-211	4
	Liberal Arts*	12
	<b>Second Year</b>	Introduction to Statics 0610-302
Pneumatic and Hydraulic Systems 0610-305		4
Data Analysis, Lab 1016-319, 379		6
College Physics II, III 1017-212, 213		8
Engineering Economics 0617-436		4
Electrical Principles for Design I 0609-411		4
Strength of Materials 0610-303		4
Liberal Arts*		4
Wellness Education†		0
Principles of Mechanical Design 0610-315		4
Computational Methods for Engineering Technology 0610-309		1
Ethics Elective		4
Free Elective		4
<b>Third Year</b>	Cooperative Education Preparation 0606-099	0
	Effective Technical Communication 0535-403	4
	Applied Dynamics 0610-405	4
	Applied Fluid Mechanics 0610-460	4
	Fundamentals of Chemistry, Lab 1011-271, 205	4
	Mechanical Engineering Technology Lab II 0610-409	2
	Materials Technology 0610-416	4
	Applied Thermodynamics 0610-440	4
	Introduction to Chemistry of Materials, Lab 1011-273, 277	4
	Liberal Arts*	4
	Cooperative Education (2 quarters)	Co-op
<b>Fourth Year</b>	Failure Mechanics 0610-403	4
	Mechanical Engineering Technology Lab I 0610-407	2
	Technical Elective	8
	Machine Design I 0610-506	4
	Thermofluids Lab 0610-465	3
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
<b>Fifth Year</b>	Technical Electives	12
	Free Electives	8
	Liberal Arts*	8
	General Educational Elective	4
	Cooperative Education (1 quarter)	Co-op
<b>Total Quarter Credit Hours</b>		<b>196</b>

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

†Please see Wellness Education Requirement for more information.

For mechanical engineering technology, BS degree, upper-division evening, and mechanical technology, evening, typical course sequences, please see the Part-time Undergraduate Studies Guide or Online Studies Guide.

## Mechanical technology, associate degree program option

An associate degree in mechanical engineering technology is also available. This part-time evening program is designed to prepare technicians for employment in the mechanical design and manufacturing fields. Since it is identical to the lower division of the full-time BS degree program, it prepares graduates 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.

## Packaging Science

**Thomas Voss, Program Chair**

[www.rit.edu/cast/mmetps/packaging/](http://www.rit.edu/cast/mmetps/packaging/)

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 multibillion-dollar industry exhibits dynamic growth and provides employment for thousands of men and women with wide-ranging skills and expertise.

### Industrial Advisory Board

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

### Cooperative education

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

### Admission guidelines

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

Students with an appropriate two-year degree may normally expect to complete the course requirements for the BS degree in two years. In addition, six months of cooperative education experience is necessary to meet graduation requirements. Transfer students with less than two years of college or with an unconventional educational background can be accommodated. The amount of transfer credit is determined by evaluating individual student transcripts.

### Packaging science, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Principles of Packaging 0607-201	3
Engineering Design Graphics 0607-301	4
Packaging Materials II 0607-312	4
College Algebra and Trigonometry 1016-204§	4
Calculus for ET 1016-231	4
College Chemistry 1011-208	4
Introduction to Chemistry of Materials, Lab 1011-273, 277	4
Introduction to Organic Chemistry, Lab 1011-213, 207	5
Principles of Microeconomics 0511-211	4
Liberal Arts*	8
Wellness Education†	0
First-Year Enrichment 1105-051, 052	2
<b>Second Year</b>	
Packaging Materials I 0607-311	4
Rigid Containers 0607-321	4
Flexible Containers 0607-322	4
Computer Applications 0607-341	4
Technical Communication 0607-420	3
Principles of Printing 2082-371	4
Principles of Marketing 0105-363	4
Introduction to Polymer Technology 1029-301	2
Microbiology in Health Disease 1004-210 or 1016-320	4
Principles of Macroeconomics 0511-402	4
Liberal Arts*	8
Wellness Education†	0
Cooperative Education 0607-499	Co-op
<b>Third Year</b>	
Career Seminar 0607-401	1
Packaging Production Systems 0607-431	4
Packaging for Distribution 0607-432	4
Packaging for Marketing 0607-433	4
Shock and Vibration 0607-485	4
College Physics I, II 1017-211, 212	8
Data Analysis I, II 1016-319, 320	10
Effective Speaking 0535-501	4
Liberal Arts*	8
Electives	4
Cooperative Education 0607-499	Co-op
<b>Fourth Year</b>	
Packaging Regulations 0607-462	4
Professional (Packaging) Electives	12
Liberal Arts*	12
Electives	20
<b>Total Quarter Credit Hours</b>	
	<b>190</b>

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

†Please see Wellness Education Requirement for more information.

§Students are required to choose two out of the following three courses to fulfill the math/science electives requirement: College Physics III (1017-213), Data Analysis II (1016-320), or Microbiology (1004-210).





## School of Hospitality and Service Management

### Francis Domoy, Chair

[www.rit.edu/hsm](http://www.rit.edu/hsm)

The School of Hospitality and Service Management offers bachelor of science degrees in hospitality and service management and nutrition 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 future 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 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 and nutrition

programs. 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.

Approximately 40 to 50 health care, corporate, and community-based facilities are used by nutrition management students for practicum experience.

## Hospitality and Service Management

The BS degree in 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 hospitality and service management 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 custom design their own unique concentration based upon their interest. This must be accomplished with an adviser for a preplanned set of courses.

## Cooperative education

The 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 seniors 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.

### Hospitality and service management, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Survey of Service Management 0619-220	2
	Basic Computer Applications 0619-221	2
	Program Concentration	12
	HSM Elective	4
	Algebra for Management Science 1016-225	4
	Science Electives with Lab	8
	Liberal Arts*	16
	Wellness Education†	0
	First-Year Enrichment 1105-051, 052	2
	Cooperative Education 0621-499	Co-op
<b>Second Year</b>	Financial Accounting 0101-301	4
	Managerial Accounting 0101-302	4
	Global Standards 0619-320	4
	Program Concentration	12
	Data Analysis I, II 1016-319, 320	10
	HSM Elective	2
	Liberal Arts*	8
	Principles of Microeconomics 0511-211	4
	Cooperative Education 0621-499	Co-op
	<b>Third Year</b>	Principles of Marketing 0105-363
Assessment of Service Quality 0619-410		4
Technology in Service Systems 0619-426		4
Human Resources Management 0619-480		4
HSM Electives		8
Liberal Arts*		4
General Education		16
Free Electives		4
Cooperative Education 0621-499		Co-op
<b>Fourth Year</b>		Leadership Management in Service Culture 0619-470
	Senior Project 0619-490	4
	Free Electives	12
	General Education	16
	Cooperative Education 0621-499	Co-op
<b>Total Quarter Credits</b>		<b>182</b>

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

†Please see Wellness Education Requirement for more information.

## Concentrations

Students choose one of seven concentrations to tailor the program toward their career interests and goals. Concentrations include: food management, food marketing and distribution, health services management, hotel and resort management, human resource management, international public relations, development, or travel and tourism management.

### Food management

It takes a wide range of knowledge for a manager to run 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.

### Concentration Courses

	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
<b>Total Quarter Credit Hours</b>	<b>24</b>

### 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.

### Concentration Courses

	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
<b>Total Quarter Credit Hours</b>	<b>24</b>

### 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 in an online learning format only.

Concentration Courses	Qtr. Cr. Hrs.
<i>Survey courses:</i>	
0635-310 Survey of Health Care Systems	4
0635-320 Health Care Administration	4
0635-351 Health Care Economics and Finance	4
<i>Specialty Courses:</i>	
0635-421 Legal Aspects of Health Care Administration	4
0635-490 Health Care Quality	4
0635-441 Health Planning and Program Development	4
<b>Total Quarter Credit Hours</b>	<b>24</b>

### 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.

Concentration Courses	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
<b>Total Quarter Credit Hours</b>	<b>24</b>

### 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 career will benefit from gaining human resource administration competencies.

Concentration Courses	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
<b>Total Quarter Credit Hours</b>	<b>24</b>

### 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 program 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.

This program 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.

Concentration Courses	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
<b>Total Quarter Credit Hours</b>	<b>24</b>

### Health systems management certificate

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 in an online learning format.

### Nutrition Management

**Barbra Cerio-Iocco, Chair**  
**Elizabeth Kmiecinski, Co-Chair**

[www.rit.edu/cast/hsm/programs/nutrition/index.html](http://www.rit.edu/cast/hsm/programs/nutrition/index.html)

People are increasingly interested in the nutritional requirements for obtaining good health and a long life. They are concerned about balanced menus away from home and the availability of special diet menus for those with serious ailments. Physical fitness centers seek educated advice about meal planning and human performance.

Dietitians work with people of all ages, cultures, and economic means. They enjoy people and learn to understand them as individuals, thereby helping to solve their nutritional needs. Dietitians are health professionals who apply the science and art of human nutrition.

The BS program in nutrition management offers a challenging curriculum that prepares students for diverse career paths in private practice; community nutrition and public health; wellness; sports fitness programs; education and corporations; clinical dietetics, hospital or long-term-care food management facilities; research for clinical, educational, or food manufacturing operations; nutrition education; restaurant consulting; and writing.

The nutrition management program leads to a BS degree that meets the education requirements of the American Dietetic Association (ADA). Students must complete three quarters of approved cooperative education experience. 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

RIT makes every effort to facilitate transfer credit. 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 is required for admission to this program.

#### Nutrition management\*\*, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Service Management Careers in Hospitality Industry 0619-220	2
	Contemporary Nutrition 0620-213	4
	Principles of Food Production 0621-225	4
	Sanitation and Safety 0621-314	2
	Orientation to Computers in Hospitality 0619-221	2
	Survey of General Chemistry, Lab 1011-201, 205	5
	Survey of Organic Chemistry, Lab 1011-202, 207	5
	Biochemistry 1011-203	3
	Algebra for Management Science 1016-225	4
	Liberal Arts*	12
	Principles of Microeconomics 0511-211	4
	Wellness Education†	2
	Cooperative Education 0621-499	Co-op
<b>Second Year</b>	Financial Accounting 0101-301	4
	Principles of Marketing 0105-363	4
	Microbiology 1004-210	4
	Anatomy and Physiology I, II 1026-350, 360	10
	Data Analysis I 1016-319	4
	Liberal Arts*	12
	Food and Beverage Management 0621-318	4
	Free Electives	8
	Cooperative Education 0621-499	Co-op
<b>Third Year</b>	Assessment of Service Quality 0619-410	4
	Technology in Service Systems 0619-426	4
	Human Resources Management 0619-480	4
	Product Development 0621-416	4
	Dietetic Environment 0620-402	4
	Restaurant Operations 0621-331	6
	Nutrition in Life Cycle 0620-554	5
	Techniques of Dietetic Education 0627-519	4
	Liberal Arts*	8
	Cooperative Education 0621-499	Co-op

<b>Fourth Year</b>	Leadership Management in Service Culture 0619-470	4
	Senior Project 0619-490	4
	Medical Nutrition Therapy I, II 0620-525, 526	9
	Community Nutrition 0620-550	4
	Nutrition and Alternative Medicine 0620-510	2
	Free Electives	4
	Liberal Arts*	12
	General Education	8

#### Total Quarter Credits

189

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

†Please see Wellness Education Requirement for more information.

\*\*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, Ill. 60606-6995.

## Environmental Management and Technology

**John Morelli, Department Chair**

[www.rit.edu/cast/cetems](http://www.rit.edu/cast/cetems)

Society realizes that environmental resources are finite, valuable, and must not be used at a rate faster than they can be replenished naturally. How do we change our resource-intensive systems of production and consumption toward that end?

Answering this question, in part, is the job of the environmental manager. Much of what we do to pursue a sustainable future will take significant time, involve research, and require new knowledge. Most of the job's responsibilities involve caring about the environment, using common sense to prevent pollution from occurring, and considering the environmental impact of everything we do.

The BS degree in environmental management and technology prepares students with the skills they need to move organizations toward a sustainable future. Activities range from keeping contaminated wastewater separated from clean water to determining how a product can be manufactured using less energy or without using toxic materials.

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 graduates will feel good about their contributions from their first day on the job.

### 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. Typically, co-ops are located in the Rochester area or near a student's hometown, but some more adventurous individuals seek jobs across the continent or overseas.

### Admission guidelines

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



## Electives

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

### Environmental management and technology, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Chemistry Principles I, II, and Labs 1011-211, 212, 205, 206	8
	Algebra for Management Science 1016-225	4
	Calculus for Management Science 1016-226	4
	Environmental Management Health and Safety Seminar 0630-200	1
	Principles of Environmental Management 0630-201	4
	Human Biology I, Lab 1004-211, 232	4
	Introduction to Organic Chemistry, Lab 1011-213, 207	4
	Field Biology 1005-210	4
	Environmental Communication 0688-327	4
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	
<b>Second Year</b>	Human Biology II, Lab 1004-212, 232	4
	Occupational Health, Lab 0630-450, 451	5
	Data Analysis I, II 1016-319, 320	8
	Professional Elective	4
	College Physics I, II, and Lab 1017-211, 212, 271, 272	8
	Environmental Geology, Lab 0630-370, 372	4
	Problem Solving and Communication with Computers 0608-225	2
	Liberal Arts*	16
	Wellness Education†	
<b>Third Year</b>	Financial Accounting 0101-301	4
	Occupational Health, Lab 0630-450, 451	5
	Introduction to Hydrology, Lab 0630-380, 382	4
	Solid and Hazardous Waste Management 0630-350	4
	Cooperative Education Preparation 0606-099	0
	Organizational Behavior 0102-430	4
	Air Emissions Management 0630-354	4
	Industrial Wastewater Management 0630-352	4
	Environmental Monitoring and Measurement, Lab 0630-360, 362	4
	Free Elective	4
	Cooperative Education (2 quarters) 0630-499	Co-op
<b>Fourth Year</b>	Environmental Regulatory Law I 0630-480	4
	Remedial Investigation and Corrective Action 0630-444	4
	Project Management 0630-490	4
	Environmental Permitting 0630-440	4
	Professional Electives	8
	Liberal Arts*	8
	Elective	4
	Cooperative Education (2 quarters) 0630-499	Co-op
<b>Fifth Year</b>	Resource Reduction 0630-505	4
	Corporate Environmental Management 0630-515	4
	Senior Project Planning 0630-509	1
	Senior Project 0630-511	3
	Electives	12
	Liberal Arts*	8
	Cooperative Education (1 quarter)	Co-op
<b>Total Quarter Credit Hours</b>		<b>194</b>

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

## Environmental Technology and Environmental, Health, and Safety Management

**John Morelli, Department Chair**  
**Joseph M. Rosenbeck, Graduate Coordinator**  
**Joshua Goldowitz, Undergraduate Coordinator**

[www.rit.edu/cast/cetems/](http://www.rit.edu/cast/cetems/)

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.

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

		Qtr. Cr. Hrs.	
<b>First Year</b>	Chemistry Principles I, II, and Labs 1011-211, 212, 205, 206	8	
	Algebra for Management Science 1016-225	4	
	Calculus for Management Science 1016-226	4	
	Environmental Management Health and Safety Seminar 0630-200	1	
	Principles of Environmental Management 0630-201	4	
	Introduction to Organic Chemistry, Lab 1011-213, 207	4	
	Field Biology 1005-210	4	
	Environmental Communication 0688-327	4	
	Human Biology II, Lab 1004-212, 232	4	
	Liberal Arts*	12	
	First-Year Enrichment 1105-051, 052	2	
	Wellness Education†	0	
	<b>Second Year</b>	Wellness Education†	0
Data Analysis I, II 1016-319, 320		8	
Professional Elective		4	
College Physics I, II, and Labs 1017-211, 212, 271, 272		8	
Environmental Geology, Lab 0630-370, 372		4	
Problem Solving and Communication with Computers 0608-225		2	
Occupational Health 0630-450, 451		5	
Liberal Arts*		16	
Free Elective		4	
Cooperative Education Preparation 0606-099		0	
Cooperative Education (1 quarter)	Co-op		

<b>Third Year</b>	Introduction to Hydrology, Lab 0630-380, 382	4
	Solid and Hazardous Waste Management 0630-350	4
	Environmental Permitting 0630-440	4
	Remedial Investigation and Corrective Action 0630-444	4
	Air Emissions Management 0630-354	4
	Industrial Wastewater Management 0630-352	4
	Environmental Monitoring and Measurement, Lab 0630-360, 362	4
	Project Management 0630-490	4
	Liberal Arts*	8
	Free Elective	4
Professional Elective	4	
Cooperative Education (1 quarter)	Co-op	
<b>Fourth Year</b>	Environmental Regulatory Law I 0630-480	4
	Corporate Environmental Management 0630-515	4
	Resource Reduction 0630-505	4
	Professional Elective (graduate)	4
	Professional Electives (undergraduate)	8
	Free Elective	4
	Liberal Arts*	8
	Occupational Safety 0630-712	4
	Organizational Behavior and Leadership 0102-701	4
	Cooperative Education (1 quarter)	Co-op
<b>Fifth Year</b>	EHS Management 0630-720	4
	EHS Accounting and Finance 0630-725	4
	EHS Management System Design 0630-740	4
	Integrating EHS into Business Management 0630-760	4
	EHS Internal Auditing 0630-790	4
	Graduate Project/Thesis Planning 0630-890	2
	Graduate Project/Thesis 0630-891, 899	4
	Professional Elective (graduate)	12
<b>Total Quarter Credit Hours</b>		<b>232**</b>

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

†Please see Wellness Education Requirement for more information.

\*\*The total quarter credit hours include 182 quarter credit hours of undergraduate course work and 50 quarter credit hours of graduate course work.

## Certificate in Environmental Management Science

Since so many environmental concerns and problems involve subsurface contamination and contaminant migration via surface and groundwater systems, understanding the principles of environmental geology and hydrology is key to sound environmental management. The environmental management science certificate program provides this valuable knowledge, plus practitioner-oriented instruction on how to design and implement a successful environmental monitoring and measurement program. Prerequisites for this program include general chemistry, college algebra, and trigonometry.

Certificate Courses	Qtr. Cr. Hrs.
0630-360, 362 Environmental Monitoring and Measurement and Lab*	4
0630-370, 372 Environmental Geology and Lab	4
0630-380, 382 Introduction to Hydrology and Lab**	4
<b>Total Quarter Credit Hours</b>	<b>12</b>

\*Introduction to Hydrology (0630-380) is a prerequisite.

\*\*Environmental Geology (0630-370) is a prerequisite.

## Certificate in Industrial Environmental Management

This certificate program covers all of the key elements of environmental management in industry. Waste minimization is emphasized as a major element of pollution control in each area of environmental management. Prerequisites include general and organic chemistry, college algebra, and trigonometry.

All the program's courses may be applied to either full-time or part-time offerings in the BS in environmental management and technology, or as part of a professional concentration in the

BS degree for applied arts and science. Students must achieve a program GPA of at least 2.5 in order to be certified for graduation. The certificate is available in an online format for those wishing to continue their education while working.

This certificate program was designed and developed with the active participation of RIT's Industrial Environmental Management Advisory Committee—all experienced, practicing environmental professionals from industry who have achieved the level of program manager or above.

### Certificate Courses

Certificate Courses	Qtr. Cr. Hrs.
0630-201 Principles of Environmental Management	4
0630-350 Solid and Hazardous Waste Management*	4
0630-352 Industrial Wastewater Management*	4
0630-354 Air Emissions Management*	4
0630-444 Remedial Investigation/Corrective Action	4
Elective	4
<b>Total Quarter Credit Hours</b>	<b>24</b>

\*Principles of Environmental Management (0630-201) is a prerequisite for these courses.

## Safety Technology

### Josh Goldowitz, Undergraduate Coordinator

[www.rit.edu/cast/cetems/safetytech.shtml](http://www.rit.edu/cast/cetems/safetytech.shtml)

Virtually every organization today depends on safety experts to ensure a safe, smooth, and effective operation. These professionals address their organizations' immediate safety needs, with work ranging from creating physically safer work places and modifying employee behaviors to implementing voluntary protection programs that go beyond legal standards.

Safety professionals protect resources such as workers, buildings, equipment, intellectual capital, and corporate reputations. They perform their functions in a variety of settings, including manufacturing, construction, engineering, insurance, risk management, consulting, corporate business, government, education, and health care. This program is available to students both on campus and in a distance-learning format.

The safety technology program is academically challenging and prepares graduates with the skills and knowledge to address their organization's immediate and long-term safety needs, including protection and preservation of workers, buildings, equipment, and corporate reputations. The program prepares graduates to be:

- qualified to practice as safety professionals in industry, government, or other related areas of employment;
- able to progress toward safety management (leadership) positions; and
- able to pursue appropriate advanced education or certification as safety professionals.

The curriculum is grounded in math, science, and the liberal arts, with specialized courses in a wide range of subjects, including occupational safety, fire protection, construction safety, incident investigation, and ergonomics. The safety technology curriculum emphasizes creative problem solving through challenging, application-based courses that provide the opportunity to solve actual safety problems provided by industry.

The program is accredited by the Applied Science Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Maryland 21202, telephone (410) 347-7700. It is operated as a cooperative education program.

## Admission guidelines

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

Transfer into the third year is open to all students who have received an appropriate associate degree or the equivalent of two years of college. Course work should include: technical math (two semesters of college-level math with an introduction to calculus), technical physics, technical sciences (including chemistry, organic chemistry, and biology), computer applications/programming, and the liberal arts.

The upper-division safety technology BS program is offered in an online format for students wishing to continue their education while working.

## Cooperative education

The safety technology program requires a minimum of four quarters of cooperative education, allowing students the opportunity to apply their skills in real-world situations before they graduate. A student's prior safety-related experience may be counted toward the cooperative education requirement. Students should speak with an adviser for more information.

## Certification

The hallmark of professional capability in the field of safety is the certified safety professional (CSP) designation. In order to sit for the two exams leading to the CSP, an individual must have academic preparation in addition to work experience in the safety field. All students completing the BS degree program in safety technology will be eligible to take the associate safety professional examination upon graduation. Eligibility for the CSP examination occurs once the graduate has acquired enough appropriate work experience (usually three additional years for students who have completed a full year of appropriate co-op assignments). RIT has structured the safety technology program to be at the leading edge of this field, providing students with high-quality academic preparation and relevant work experience.

### Safety technology, BS degree, typical course sequence

	Qtr.	Cr. Hrs.
<i>First Year</i>		
Environmental Health and Safety Seminar 0630-200†		1
General Chemistry, Lab 1011-201, 205‡		4
College Algebra and Trigonometry 1016-204		4
College Physics I, Lab 1017-211, 271‡		4
Principles of Environmental Management 0630-201		4
Calculus for Engineering Technology I 1016-231		4
Occupational Safety 0630-454		4
Introduction to Organic Chemistry, Lab 1011-213, 207‡		4
Liberal Arts*		12
First-Year Enrichment 1105-051, 052		2
General Elective		4

<i>Second Year</i>	Manufacturing Processes 0617-220‡	4
	Applied Mechanics I 0610-408	4
	Human Biology II, Lab 1004-212, 232‡	4
	College Physics II, Lab 1017-212, 272‡	4
	Data Analysis I 1016-319	4
	Elements of Building Construction 0608-422	4
	Construction Safety 0633-505	4
	Program Electives	8
	Liberal Arts*	12
	Problem Solving and Communication with Computers 0608-225‡	2
	Wellness Education†	0

<i>Third Year</i>	Occupational Health, Lab 0630-450, 451	5
	Fire Protection 0630-401	4
	Manmade Hazards 0634-321	4
	Occupational Health II 0633-526†	4
	Instructional Design Principles 0688-362	4
	Liberal Arts*	4
	General Education	4
	Program Elective	4
	Cooperative Education Preparation 0606-099	0
	Cooperative Education (2 quarters) 0630-499	Co-op

<i>Fourth Year</i>	Product Stewardship 0630-465	4
	Project Management 0630-490	4
	Ethics Course	4
	Program Electives	12
	Liberal Arts*	8
	Cooperative Education (2 quarters) 0630-499	Co-op

<i>Fifth Year</i>	Mechanical and Electrical Controls 0633-530	4
	System Safety/Incident Investigation 0633-540	4
	Senior Project Planning 0630-509	1
	Liberal Arts*	4
	Ergonomics 0303-415	3
	Safety and Health Program Management 0633-545	4
	Senior Project 0630-511	3
	Program Electives	8

### Total Quarter Credit Hours

193

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

†Please see Wellness Education Requirement for more information.

‡Courses either not available in distance learning format or have an on-campus component.

## Safety Technology and Environmental, Health, and Safety Management

**John Morelli, Department Chair**

**Joseph M. Rosenbeck, Graduate Coordinator**

**Joshua Goldowitz, Undergraduate Coordinator**

[www.rit.edu/cast/cetems/safetytech.shtml](http://www.rit.edu/cast/cetems/safetytech.shtml)

Qualified safety technology undergraduate students may pursue an accelerated dual degree program. Successful completion of the five-year accelerated program will result in students earning a BS in safety technology and an MS in environmental, health, and safety management. The BS/MS program requires the completion of 231 total quarter credit hours, including 50 quarter credit hours of graduate course work plus three quarters of cooperative work experience. The BS/MS program is an option for students who are already enrolled in the BS in safety technology program, have completed at least four quarters of undergraduate study, and have a cumulative GPA of at least 3.2.

Below is a sample course schedule for the BS/MS program. Students interested in the program should work with their program advisers and start following this course schedule during their freshman year.



## Safety technology and EHS, BS/MS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Environmental Management Seminar 0630-200	1
Chemistry Principles I, Lab 1011-211, 205	4
College Algebra and Trigonometry 1016-204	4
First-Year Enrichment 1105-051, 052	2
College Physics I, Lab 1017-211, 271	4
Principles of Environmental Management 0630-201	4
Human Biology II, Lab 1004-212, 232	4
Occupational Safety 0630-454	4
Introduction to Organic Chemistry, Lab 1011-207, 213	4
Liberal Arts*	12
General Education	4
Wellness Education†	0
<b>Second Year</b>	
Manufacturing Processes 0617-220	4
Data Analysis I 1016-319	4
Applied Mechanics I 0610-408	4
Occupational Health, Lab 0630-450, 451	5
Physics II, Lab 1017-212, 272	4
Calculus for Technology 1016-231	4
Elements of Building Construction 0608-422	4
Liberal Arts*	8
Problem Solving and Communications with Computers 0608-225	2
Construction Safety 0633-505	4
Elective	8
Cooperative Education Preparation 0606-099	0
Cooperative Education (1 quarter)	Co-op
Wellness Education†	0
<b>Third Year</b>	
Liberal Arts*	8
Program Electives (undergraduate)	12
Fire Protection 0633-401	4
General Education Elective	4
Occupational Health II 0633-526	4
Manmade Hazards 0634-321	4
Instructional Design Principles 0688-362	4
Effective Technical Communications 0535-403	4
Project Management 0630-490	4
Cooperative Education (1 quarter)	Co-op
<b>Fourth Year</b>	
Product Stewardship 0630-465	4
Liberal Arts*	8
Industrial Wastewater Management 0630-714	4
Ethics 0509-211	4
Mechanical and Electrical Controls 0633-530	4
Air Emissions Management 0630-715	4
Ergonomics 0303-415	3
System Safety, Incident Investigation 0633-540	4
Program Elective (undergraduate)	4
Solid and Hazardous Waste Management 0630-713	4
Safety and Health Program Management 0633-545	4
Cooperative Education (1 quarter)	Co-op
<b>Fifth Year</b>	
Environmental Health and Safety Management 0630-720	4
Integrating Environmental Health and Safety into Business Management 0630-760	4
Graduate Project/Thesis Planning 0630-890	2
Organizational Behavior and Leadership 0102-740	4
Environmental Health and Safety Management System Design 0630-740	4
Professional Elective (graduate)	4
Environmental Health and Safety Accounting and Finance 0630-725	4
Environmental Health and Safety Internal Auditing 0630-790	4
Graduate Project/Thesis 0630-891/899	4
Professional Elective (graduate)	4
Cooperative Education (1 quarter)	Co-op
<b>Total Quarter Credit Hours‡</b>	<b>231</b>

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

†Please see Wellness Education Requirement for more information.

‡The total quarter credit hours include 181 quarter credit hours of undergraduate course work and 50 quarter credit hours of graduate course work.

## Certificate in Disaster and Emergency Management

Heightened public and governmental awareness of the hazards associated with high technology has led to stringent new federal and state laws requiring communities to plan comprehensively for toxic chemical or radiation emergencies. In addition, there has been a need to protect the public during natural emergencies such as floods, earthquakes, hurricanes, and tornadoes.

The federal government, along with emergency management practitioner organizations, is developing national standards for the accreditation of emergency managers. The certificate in disaster and emergency management is intended to upgrade the skills of public safety planners, emergency officials in industry, and existing or aspiring emergency managers in police, fire, and ambulance work. The program also is an excellent capstone for individuals with associate degrees in fire science, environmental health and safety, or other areas of emergency response.

The certificate's six courses are designed to provide students with knowledge of the physical phenomena underlying emergency situations, such as elementary meteorology, earthquake phenomena, toxic chemicals and radiation; the legal aspect of emergency planning and operations; the theory and methodology of emergency planning, including evacuation planning and management; and the theory and practice of operations at a disaster scene. Students may earn up to four credits for previous training or experience in the field.

The certificate may be completed in as little as one year. For students interested in continuing their studies, the certificate's courses may be applied toward the professional requirements of the BS degree in applied arts and science or the BS degree in safety technology. Students must achieve a GPA of at least 2.0 in order to be certified. These courses are offered in the online learning format.

Certificate courses have been developed with the assistance of local and state professionals in emergency management and are taught by these professionals.

### Certificate Courses

	Qtr. Cr. Hrs.
0634-311 Earth Science	4
0634-321 Manmade Hazards	4
0634-401 Emergency Preparedness Laws and Regulations	4
0634-471 Emergency Planning and Methodology	4
0634-481 Emergency Operations	4
0634-475 Counterterrorism for the First Responder	4
<b>Total Quarter Credit Hours</b>	<b>24</b>

## Certificate in Safety and Health Technology

Designed for accessibility and convenience, this certificate program is offered in both campus-based and online learning formats and consists of seven courses. Transfer credits and course substitutions require the approval of the department chair. Upon approval, these courses may also be applied toward the BS program in safety technology. Prerequisites for this program include general chemistry, biology, college algebra, and trigonometry. Students must achieve a program GPA of at least 2.5 in order to be certified.

Certificate Courses	Qtr. Cr. Hrs.
0630-450 Occupational Health	4
0630-454 Occupational Safety	4
0633-401 Fire Protection	4
0633-540 System Safety/Incident Investigation*	4
0633-545 Safety and Health Program Management**	4
0633-505 Construction Safety	4
Professional Elective†	4
<b>Total Quarter Credit Hours</b>	<b>28</b>

\*Occupational Health (0630-450) and Occupational Safety (0630-454) are prerequisites.

\*\*Occupational Health (0630-450) is a prerequisite.

†Manmade Hazards and Project Management (0634-321) is a suggested elective.

## Center for Multidisciplinary Studies

**James Myers, Director**

[www.rit.edu/cms](http://www.rit.edu/cms)

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. Today's professional workplace looks for and values individuals with a diverse academic background. The center offers students this valuable opportunity through their applied arts and science degree programs and specialized certificate programs. These programs provide students with a multidisciplinary approach to learning that can be applied to the professional environment. Also the diverse nature of the applied arts and science program is an asset for any corporation looking to do more with less.

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. Through the center's flexible, multidisciplinary programs, students tailor their plans of study to their individual interests by incorporating courses or sets of courses from the center or other RIT departments. The center's programs include:

- applied arts and science undergraduate degree programs—a comprehensive undergraduate program with BS, AAS, and diploma options that allows students to pursue unique and customized plans of study that include several areas of concentration;
- AAS degrees in business administration and human resources;
- a management development program (certificate and diploma); and
- several specialized certificate programs.

### General information

#### Enrollment policies

The Center for Multidisciplinary Studies 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 programs are expected to complete their degrees within seven years.

### Academic advising

The Center for Multidisciplinary Studies provides academic advising for educational and career goals.

The 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.

To schedule an advising session, contact the CMS office at (585) 475-2234, or via e-mail at [cms@rit.edu](mailto:cms@rit.edu).

### Transfer credit

Degree programs in the center are structured to permit transfer of credit from other accredited institutions. When a student matriculates into a specific program, a complete evaluation is made of prior academic work. The student will know immediately how much transfer credit is awarded and what courses will be needed to earn a specific degree.

Transfer credit also may be awarded for courses included in the New York State Education Department publication "Guide to Educational Programs in Non-Collegiate Organizations."

### 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 [efcvet@rit.edu](mailto:efcvet@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).

## Faculty

Full- and part-time faculty members use their vast experiences in industry to guide their classroom instruction. Our faculty are selected for their professional competence, academic background, and teaching ability.

## Online learning

The center offers a variety of courses through online learning, with students having the option of completing certificates, diplomas, and AAS and BS degrees online. Online learning allows students flexibility in completing their courses while maintaining a class atmosphere through online discussions via chat/e-mail conferencing. Courses taught through online learning use textbook readings, assignments, and exams to deliver course work. Students have access to instructors by e-mail, computer, telephone, or individual appointments.

## 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. Active U.S. Army Reserve and National Guard members are eligible for benefits that pay up to 90 percent of tuition.

## Center for Multidisciplinary Studies Scholarship

The Center for Multidisciplinary Studies offers a scholarship to matriculated students in the center's programs who have earned a minimum GPA of 2.0. Awards are based upon merit and financial need. Students can learn more about this scholarship from their academic adviser or by visiting [www.rit.edu/cms/financial.html](http://www.rit.edu/cms/financial.html).

## Course scheduling options

The center's courses and programs are offered during the day, at night, on Saturdays, and online. The center also works with employers to design multidisciplinary programs that are specially suited to meet their employees' needs. Please visit the "corporate" link on the center's website to learn more.

## Applied arts and science degrees

The center 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, or want to prepare themselves for a career that requires skills and expertise from several disciplines. There are three levels:

**Bachelor of science (BS) degree:** 180 quarter 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 quarter credit hours total; 52 core credits in general education plus 38 credits in one to two areas of concentration

**Diploma:** 36 quarter credits hours; one area of concentration

The AAS and BS degrees are available to full-time day students, part-time evening students, and online students. These de-

grees 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
- Print Management Studies
- Disaster and Emergency Management
- Industrial and Environmental Management
- E-business
- Public Relations
- International Logistics and Transportation

### Computer/technical focus

- Applied Computing
- Technical Communications
- Computer Science Studies
- Engineering Technology Studies
- Telecommunications
- Computer Graphics
- Structural Design
- Geographic Information Systems
- Mechanical Technology

### Liberal arts focus

- Economics
- Criminal Justice Studies
- Psychology Studies
- Creative Writing
- Foreign Language

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 his or her 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.

### Common features

All applied arts and science degrees have certain features in common: an approved program of study developed with an individual adviser and reviewed by the center's degree review committee, which consists of faculty and advisers; general education courses in mathematics, computer literacy, science, and the liberal arts (52 credits for the AAS, 90 for the BS); and one or more professional concentrations that provide each student with the oppor-

tunity to develop a multidisciplinary program tailored to specific career and personal objectives. Students must achieve a minimum program GPA of 2.0 in order to be certified for completion or graduation.

## Business and Management AAS Degree Programs

The center offers associate degrees in business administration and human resources administration. All business and management degree programs include a core group of business courses in organization and management, accounting, management, and business law. Approximately half of the credits in degree programs are earned through these professional courses. In addition, all business and management degree programs include 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 degrees in business administration and human resources administration are fully transferable into the bachelor of science degree in applied arts and science.

### Professional concentration requirements, business and management AAS programs

Business administration	Qtr. Cr. Hrs.
History or Fine Arts Elective	4
0680-315 Legal Environment of Business	4
Business Electives	12
<b>Total Quarter Credit Hours</b>	<b>20</b>

Human resource administration	Qtr. Cr. Hrs.
0619-480 Human Resource Administration	4
0626-234 Interviewing Techniques	4
<i>Choose one of the following:</i>	
0680-311 Business Law I	4
0680-315 Legal Environment of Business	4
Business Electives	4
<b>Total Quarter Credit Hours</b>	<b>20</b>

### The management development program

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 a 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.

### Certificate in Management Development

The management development certificate focuses on practical applications of management theory; management problems, solutions, and ideas; and personal development as an effective manager.

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.

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.

Certificate in management development	Qtr. Cr. Hrs.
0681-200 Management Process I	4
0681-201 Management Process II	4
0681-202 Management Process III	4
<b>Certificate Total</b>	<b>12</b>

### Management Diploma

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. However, the small business management certificate also may be taken as a component of the diploma.

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	Qtr. Cr. Hrs.
0681-200, 201, 202 Management Process (or approved alternative)	12
0680-201 Financial Accounting	4
0680-203 Managerial Accounting	4
0680-341 Information Resources and Network Tools	4
0681-361 Marketing (or Business Elective)	4
<b>Total Quarter Credit Hours</b>	<b>28</b>

Diploma in marketing	Qtr. Cr. Hrs.
0681-200, 201, 202 Management Process (or approved alternative)	12
0681-361 Marketing	4
0681-261 Effective Selling	4
0681-263 Advertising Principles	4
Business Elective	4
<b>Total Quarter Credit Hours</b>	<b>28</b>

Diploma in human resource administration	Qtr. Cr. Hrs.
0681-200, 201, 202 Management Process (or approved alternative)	12
0619-480 Human Resource Management	4
0626-234 Interviewing Techniques	4
0680-311 Business Law I	4
Business Elective	4
<b>Total Quarter Credit Hours</b>	<b>28</b>

### Specialized certificates

Specialized certificates appeal to professionals looking to upgrade their current skills or take on a new direction professionally or personally. The center provides specialized certificate programs in a number of areas: computer graphics, e-business, human resource development, international logistics and transportation,



manufacturing technology (computer-aided drafting, fundamentals of manufacturing management, manufacturing processes, and robotics), organizational change and leadership, public relations (graphic communication and professional writing options), quality management (basic quality and quality implementation options), small business management, and technical communication (basic and advanced options).

All certificate programs are applicable to the applied arts and science degree or diploma programs as professional concentrations.

### Computer Graphics

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 skill 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.

Certificate in computer graphics	Qtr.	Cr. Hrs.
0688-271 Basic Computer Graphics		2
0688-371 Designing with Computers I		3
0688-372 Designing with Computers II		3
0688-373 Electronic Presentation Design		3
0688-381 Photographic Imaging with Computers I		3
0688-382 Photographic Imaging with Computers II		3
0688-383 Introduction to Internet Design		3
<b>Total Quarter Credit Hours</b>		<b>20</b>

A number of elective courses are offered through the program and may be substituted with the permission of the program chair. Students may earn one or more of the certificates. 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.

### e-Business

The e-business certificate is designed to help professionals understand how to do business on the Web. Students establish a foundation in the technologies, strategies, and tactics that make e-business initiatives successful. This certificate can be completed online.

Certificate in e-business	Qtr.	Cr. Hrs.
0112-310 Introduction to e-Business Technologies		4
0105-445 Business-to-Business e-Commerce		4
0112-510 Designing the e-Business Organization		4
0105-440 Internet Marketing		4
Two Business Electives*		8
<b>Total Quarter Credit Hours</b>		<b>24</b>

\*Business electives require approval from an academic adviser.

### Human Resource Development

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.

Certificate in human resource development	Qtr.	Cr. Hrs.
0697-442 The Learning Organization		4
0697-431 Understanding Corporate Culture		4
0626-234 Interviewing Techniques		4
0619-480 Human Resource Management		4
0626-390 Compensation and Benefits		4
<b>Total Quarter Credit Hours</b>		<b>20</b>

### Course requirements, AAS and BS Degrees in Applied Arts and Science (See adviser for course options.)

	Math/Computer/Science	Credit	Liberal Arts	Credit	Professional Core(s) 1 to 2	Credit
AAS	Computer/Technology Elective	4	Writing 0502-227\$	4	One to two professional concentrations* to be developed by student and adviser.	38
			Arts of Expression 0504-319	4		
	Math Electives	8	Communication Elective	4		
	Science Electives	8	Humanities Electives	8		
	Math/Science	4	Behavioral Science Electives	8		
BS	no additional required		General Education‡	30	Two to four professional concentrations* to be developed by student and adviser.	48
			Liberal Arts Concentration#	12		
			Multidisciplinary Life† 0697-510	4		
			Free Electives	12		

\*A concentration equals 20 (or more) quarter credit hours in one subject area (e.g., applied computing, business, communication, etc.).

\$A writing pre-test is required. Students completing the BS degree must also pass a writing competency test.

‡See adviser for a list of accepted general education electives.

#Students choosing a liberal arts area for a professional concentration must choose their liberal arts concentration and electives in other disciplines or interdisciplinary areas in the College of Liberal Arts.

†Multidisciplinary Life (0697-510) is required by all BS students and can be taken as part of the general education requirements or as part of a professional concentration.



## International Logistics and Transportation

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 product for sales; and the deployment of training, spare parts, support equipment, documentation, maintenance, and upgrades for equipment that is in the field. Independent providers of logistics services, called third-party logistics service suppliers, have emerged to create a new and important service sector in the last decade. Courses in this certificate program are offered through the online learning format only.

### Certificate in international logistics and transportation

**Qtr. Cr. Hrs.**

0681-451 Introduction to Logistics and Transportation	4
0681-525 Strategic Logistics Management	4
0681-526 Logistic Law and Economics	4
<b>Total Quarter Credit Hours</b>	<b>12</b>

## Manufacturing Technology

A number of certificates are available in manufacturing technology, including computer-aided drafting, fundamentals of manufacturing management, manufacturing processes, and robotics.

### Certificate in computer-aided drafting\*

**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
<b>Total Quarter Credit Hours</b>	<b>16</b>

\*Prerequisite: Computer Literacy

### Certificate in fundamentals of manufacturing management\*

**Qtr. Cr. Hrs.**

0617-436 Engineering Economics	4
0617-440 Production and Operations Management I**	4
0617-441 Production and Operations Management II**	4
<b>Total Quarter Credit Hours</b>	<b>12</b>

\*Prerequisites: College Algebra, Statistics, Computer Literacy  
\*\*These courses are available online.

### Certificate in manufacturing processes\*

**Qtr. Cr. Hrs.**

0617-220 Manufacturing Processes I	4
0617-420 Manufacturing Processes II	4
0617-471 Computer Numerical Control	4
<b>Total Quarter Credit Hours</b>	<b>12</b>

\*Prerequisites: Engineering Drawing, Computer Literacy

### Certificate in robotics

**Qtr. Cr. Hrs.**

0618-231 Technical Programming I	4
0617-470 Controls for Manufacturing Automation	4
0617-485 Robots in Manufacturing	4
<b>Total Quarter Credit Hours</b>	<b>12</b>

## Organizational Change and Leadership

The organizational change and leadership certificate will help 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. Courses in this certificate are offered on campus and through online learning.

### Certificate in organizational change

**Qtr. Cr. Hrs.**

0697-430 Survey of Organizational Change	4
0697-432 Managing Organizational Change	4
0697-431 Understanding Corporate Culture	4
0697-435 Global Forces and Trends	4
0697-434 Change and Leadership Project	4
Elective	4
<b>Total Quarter Credit Hours</b>	<b>24</b>

## Core Requirements, All Business and Management AAS Programs

Professional program requirements are added to these core requirements

Professional Courses (in addition to the above)	Credit	General Education	Credit	Math, Statistics and Science	Credit
Financial Accounting 0680-201	4	Writing and Arts of Expression 0502-227/0504-319	8	Science Electives†	8
Managerial Accounting 0680-203	4	or		College Math for Business I, II 0692-211, 212	8
Organization and Mgmt. 0681-205	4	Communicating in Business and Writing 0688-325 /0502-227	8	Statistics I, II 0692-311, 312	8
Computer Elective	4	Micro and Macro Economics 0511-211, 402	8		
Principles of Marketing 0681-361	4	Psychology 0514-210	4		
Management Science 0680-353	4	Sociology 0515-210	4		
Professional Concentration Courses (see above)	20				
<b>Total</b>	<b>44</b>	<b>Total</b>	<b>24</b>	<b>Total</b>	<b>24</b>

In sequentially numbered courses, the lower-number course is prerequisite.

†Science electives may include any of the following:

- 0692-231 Contemporary Science/Biology
- 0692-232 Contemporary Science/Chemistry
- 0692-233 Contemporary Science/Physics
- 0692-234 Contemporary Science/Oceanus

- 1026-305 Sports Physiology and Life Fitness
- 1026-306 Fitness Prescription/Programming
- 1026-307 Exercise Prescription
- 0634-311 Earth Science
- 0634-321 Man-Made Hazards

## Public Relations

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.

The certificate program in public relations covers two key areas: writing and graphic communication. 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 professional writing option provides specialized instruction in writing marketing materials, inbound and outbound publications, corporate-level communications, speeches, and scripts. The graphic communication option (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.

These programs 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. The professional writing option is offered in the online format only.

Core Courses	Qtr.	Cr. Hrs.
0688-350 Introduction to Public Relations		2
0688-356 Strategic Communications		2
0681-264 Advertising Evaluation and Techniques		4
0688-348 Managing the Project		2
<b>Total Quarter Credit Hours</b>		<b>10</b>

Certificate in professional writing	Qtr.	Cr. Hrs.
Core Courses		10
0688-352 Writing for the Organization		2
0688-357 Media Relations		2
0688-347 Promotional Writing		2
0688-353 Scripting and Audio Video Presentations		2
0688-354 Speechwriting		2
<b>Total Quarter Credit Hours</b>		<b>20</b>

Certificate in graphic communication	Qtr.	Cr. Hrs.
Core Courses		10
0688-355 Coordinating Publication Production		2
<i>Electives*—Choose three of the following courses:</i>		
0688-371 Designing with Computers I		3
0688-372 Designing with Computers II		3
0688-373 Electronic Presentation Design		3
0688-381 Photographic Imaging with Computers I		3
0688-382 Photographic Imaging with Computers II		3
0688-383 Introduction to Internet Design		3
0688-374 Designing with Corel		3
0688-384 Designing with QuarkXPress		3
<b>Total Quarter Credit Hours</b>		<b>21</b>

\*With adviser's approval

## Quality Management

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. Organizations have begun to understand that prevention saves more time and money than the discovery of flaws after the fact.

The center's management-oriented certificate programs focus 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.

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	Qtr.	Cr. Hrs.
0684-310 Introduction to Quality		4
0684-340 Quality Data Analysis		4
0684-410 Introduction to Lean Six Sigma		4
<i>Choose one of the following courses:</i>		
0684-420 Statistical Quality Tools		4
0684-430 Management for Quality		4
<b>Total Quarter Credit Hours</b>		<b>16</b>

## Small Business Management

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.

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 completed through online learning only.

Certificate in small business management	Qtr.	Cr. Hrs.
0681-221 New Venture Development		4
0681-222 Small Business Management and Finance		4
0681-223 Small Business Marketing and Planning		4
<b>Total Quarter Credit Hours</b>		<b>12</b>

## Technical Communication

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 different 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 the workplace today.

The following sequence of courses provides a strong, practical foundation in technical communication skills. The certificate may be completed in three quarters of online, part-time study.

<b>Certificate in basic technical communication</b>	<b>Qtr. Cr. Hrs.</b>
0688-333 Technical Writing and Editing	4
0688-363 Technical Document Design	4
<i>Choose one of the following courses:</i>	
0688-361 Research Techniques	4
0688-476 Instructional Design Principles	4
<b>Total Quarter Credit Hours</b>	<b>12</b>

*Prerequisites include a command of standard written English as demonstrated by examination, portfolio, or transcripts.*

### Advanced Technical Communication

For those interested in more advanced professional development and instruction in specialized topics, the center offers the certificate in advanced technical communication, which may be completed in three quarters of study. These courses may also be taken simultaneously with courses in the basic technical communication certificate.

<b>Certificate in advanced technical communication</b>	<b>Qtr. Cr. Hrs.</b>
0688-544 Writing in the Sciences	4
0688-477 Managing Media Presentations	4
0688-475 Writing Software User Documentation	4
<b>Total Quarter Credit Hours</b>	<b>12</b>

Technical Information Design (0688-510), Technical Proposals (0688-514), Technical Procedures (0688-512), and Document Usability (0688-511) may be substituted for one of the required advanced courses with permission of the program chair. In addition, various special topics courses (0688-398) 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 a course 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. Both certificate programs are completed through online learning only.

## Department of Military Science

### Reserve Officer Training Corps (ROTC)—ARMY

**Lt. Col. Lynn Lubiak, Professor of Military Science**

[www.rit.edu/cast/armyrotc](http://www.rit.edu/cast/armyrotc)

The Army Reserve Officer 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.

ROTC classes are open to all students, with no military obligation 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 fun activities that reinforce leadership skills, teamwork, and confidence. Cadets are able to participate in events unique to the military such as Dining Out, a military dinner steeped in tradition. They also have the opportunity to participate in high-adventure training weekends on U.S. military installations, where they learn skills such as navigating with a map and compass, rappelling as part of mountaineering instruction, or completing a high ropes or 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 marksmanship team and the Pershing Rifle organization. ROTC members also conduct community activities and provide color guard and drill teams to 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 room and board. Visit the Cadet Command website ([armyrotc.com](http://armyrotc.com) or [www.armyrotc.rit.edu](http://www.armyrotc.rit.edu)) for additional information. Students may apply for Army ROTC scholarships by using the online application process on the Army ROTC website ([armyrotc.com](http://armyrotc.com)).

### 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 register for a class (and its lab requirement) and Army Conditioning Drills, which fulfill 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 Army Airborne School or Air Assault School.

### 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 heavily 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 summer program after year three), 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 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). LTC is a 28-day course held at Fort Knox, 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 as soon as possible, but no later than the beginning of spring quarter.

### 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 (LDAC)

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

		Qtr. Cr. Hrs.
<b>First Year, MS I</b>	Introduction to Military Science 0640-201	2
	Applied Military Dynamics 0640-202	2
	Military Heritage 0640-203	2
<b>Second Year, MS II</b>	Military Geography 0640-301	2
	Psychology and Leadership 0640-302	2
	The Military and American Society 0640-303	2
<b>Third Year, MS III</b>	Military Tactics 0640-401	3
	Military Communications 0640-402	3
	Military Operations 0640-403	3
	Survey of American Military History 0640-520	4
<b>Fourth Year, MS IV</b>	Army Training Systems 0640-501	3
	Military Administration and Logistics Management 0640-502	3
	Military Law and Ethics 0640-503	3
<b>Total Quarter Credit Hours</b>		<b>34</b>

Please note: A leadership lab, which is conducted on a weekly basis for two hours, is an integral part of each course listed in the typical course sequence chart. (Class 1, Lab 1 = Credit 2, or Class 2, Lab 1 = Credit 3).

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

		Qtr. Cr. Hrs.
<b>Third Year, MS III</b>	Military Tactics 0640-401	3
	Military Communications 0640-402	3
	Military Operations 0640-403	3
<b>Fourth Year, MS IV</b>	Army Training Systems 0640-501	3
	Military Administration and Logistics Management 0640-502	3
	Military Law and Ethics 0640-503	3
<b>Total Quarter Credit Hours</b>		<b>18</b>

Please note: A leadership lab, which is conducted on a weekly basis for two hours, is an integral part of each course listed on the typical course sequence (Class 1, Lab 1 = Credit 2, or Class 2, Lab 1 = Credit 3).

## 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/](http://www.rit.edu/cast/afrotc/)

Participation in Air Force Reserve Officer Training Corps provides students 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.

### Characteristics

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 did not complete the 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 senior 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 professional development programs are offered to cadets. Cadets also may volunteer for special summer programs, such as freefall parachute school, foreign language immersion, special engineering orientation programs, drill team, honor guard, base visits, and Arnold Air Society (a community service organization).

### Wellness education requirement

RIT's Wellness Education requirement can be satisfied by completing the leadership lab. Students must be enrolled in AFROTC to participate in the lab.

### Qualifications 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](http://www.afrotc.com) to compete for four-year scholarships through a national board process. Every scholarship cadet and all Professional Officer Course cadets receive a monthly allowance between \$300–500.

### 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\*

		Qtr. Cr. Hrs.
<b>First Year</b>	Air Force Today I, II, III 0650-210, 211, 212	3
	Leadership Lab 1114-002	0
<b>Second Year</b>	History of Air Power I, II, III 0519-201, 202, 203	4
	Leadership Lab 1114-002	0
<b>Third Year</b>	Air Force Leadership and Management I, II 0102-310, 311	10
	Leadership Lab 1114-002	0
<b>Fourth Year</b>	Leadership Lab 1114-002	0
<b>Fifth Year</b>	National Security Affairs I, II 0513-401, 402	9
	Leadership Lab 1114-002	0
<b>Total Quarter Credit Hours</b>		<b>26</b>

\*NOTE: This typical 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 students enrolled at RIT but not taking Air Force junior- or senior-level course must be enrolled in Leadership Lab.



# E. Philip Saunders College of Business

**Ashok Rao, Dean**

*saunders.rit.edu*

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 has academic programs that consist 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, as well as choose a liberal arts concentration or minor.

## **Business core**

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 include:

- 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 and Policy
- 0104-350 Corporate Finance
- 0105-363 Principles of Marketing
- 0106-401 Operations and Supply Chain Management
- 0112-275 Business 2: Computer-Based Analysis
- 0112-280 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

## **Programs of study**

Students concentrate their study in a specific business career field. The college offers the following majors:

- Accounting
- Finance
- International Business\*
- Management
- Management Information Systems
- Marketing
- New Media Marketing

For students whose interests fall into the business realm, but who 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 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.

Students also may choose to develop an additional area of business knowledge by completing one of the minors offered by the college. Advisers assist students in choosing a business minor that complements their area of study or their personal interests. Business majors may pursue any of the business minors with the exception of business administration. Students may also choose from more than 90 other minors to enhance their program of study or pursue a secondary area of professional interest.

## **Admission**

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

## **Faculty**

The college's faculty members are world class. They 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.

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

## Facilities

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 students 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 experience, RIT's 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

RIT is committed to providing advising services throughout a student's academic program. Through the Student Services Office, all students are assured administrative support to effectively deal with registration, records, and scheduling. In addition, the administrative staff provides students with information about other support areas within RIT. Students are assigned an individual faculty adviser, who becomes an integral part of their advising network. Advisers are available for advice on cooperative education and career options.

## Academic enrichment

Academic enrichment includes the Honors program, study abroad, and minors.

**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 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. RIT's 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:** To broaden a student's experience and professional opportunities, RIT offers more than 90 minors to choose from, including business minors offered by the Saunders College,



which include accounting, business administration, digital business, entrepreneurship, finance, international business, management, management information systems, and marketing. For further information, please see the Minors section of this bulletin, or contact a college adviser.

## Graduate programs

The college offers the following graduate degree programs: master of business administration (traditional, Executive MBA, and Fast Track options), 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. These programs are available on a full- or part-time basis and prepare students for all aspects of business management. Details are contained in the Graduate Bulletin, available from the Office of Graduate Enrollment Services.

## Accelerated dual degree option

Undergraduate business students may want to 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.

## Accounting

[saunders.rit.edu/undergraduate/accounting/index.php](http://saunders.rit.edu/undergraduate/accounting/index.php)

The accounting curriculum 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.

The program contains four free electives. Students planning to obtain an MBA-Accounting degree and a career in public accounting should take the following electives: Advanced Taxation (0101-523), Auditing (0101-530), Advanced Accounting (0101-540), and Commercial Law (0110-320).

For students seeking careers outside of public accounting, the following recommendations are suggested ways in which electives may benefit additional career goals:

- Obtain a minor in management information systems.
- Select electives and other course work, such as Business Legal Research and Writing (0110-350), 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.

### Accounting, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
First-Year Enrichment 1720-051, 052	2
Business 1: Ideas and Creativity 0102-260	4
Business 2: Computer-Based Analysis 0112-275	2
Business 3: Commercialization 0112-280	4
Principles of Microeconomics 0511-211	4
Principles of Macroeconomics 0511-402	4
Professional Communication for Business 0535-352	4
Calculus for Management Science 1016-226	4
Data Analysis I, II 1016-319, 320	10
Liberal Arts*	12
Wellness Education†	0
<b>Second Year</b>	
Financial and Management Accounting 0101-301, 302	8
Accounting Information Systems 0101-345	4
Careers in Business 0102-305	1
Global Business: An Introduction 0113-310	4
Corporate Finance 0104-350	4
Legal Environment of Business 0110-319	4
Liberal Arts*	12
General Education	8
Laboratory Sciences	8
<b>Third Year</b>	
Financial Reporting and Analysis I 0101-408	4
Financial Reporting and Analysis II 0101-409	4
Personal and Small Business Taxation 0101-522	4
Organizational Behavior 0102-320	4
Business Ethics 0102-438	4
Principles of Marketing 0105-363	4
Liberal Arts*	12
Free Electives	8
Cooperative Education‡	Co-op

<b>Fourth Year</b>	
Financial Accounting and Reporting Issues 0101-550	4
Strategy and Policy 0102-551	4
Operations and Supply Chain Management 0106-401	4
Managing Corporate Assets and Liabilities 0104-452	4
Cost Accounting 0101-431	4
Managing Innovation and Technology 0102-530	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.

## Finance

[saunders.rit.edu/undergraduate/finance/index.php](http://saunders.rit.edu/undergraduate/finance/index.php)

The finance major 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.

### Finance, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
First-Year Enrichment 1720-051, 052	2
Business 1: Ideas and Creativity 0102-260	4
Business 2: Computer-Based Analysis 0112-275	2
Business 3: Commercialization 0112-280	4
Principles of Microeconomics 0511-211	4
Principles of Macroeconomics 0511-402	4
Professional Communication for Business 0535-352	4
Calculus for Management Science 1016-226	4
Data Analysis I, II 1016-319, 320	10
Liberal Arts*	12
Wellness Education†	0
<b>Second Year</b>	
Financial and Management Accounting 0101-301, 302	8
Careers in Business 0102-305	1
Global Business: An Introduction 0113-310	4
Corporate Finance 0104-350	4
Legal Environment of Business 0110-319	4
Liberal Arts*	12
Free Electives	8
General Education	4
Laboratory Sciences	8
<b>Third Year</b>	
Organizational Behavior 0102-320	4
Business Ethics 0102-438	4
Managing Corporate Assets and Liabilities 0104-452	4
Intermediate Investments 0104-453	4
Principles of Marketing 0105-363	4
Liberal Arts*	12
Free Elective	4
General Education	4
Cooperative Education‡	Co-op
<b>Fourth Year</b>	
Strategy and Policy 0102-551	4
Financial Analysis and Modeling 0104-460	4
Finance Electives	8
Finance in a Global Environment 0104-504	4
Operations and Supply Chain Management 0106-401	4
Managing Innovation and Technology 0102-530	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

[saunders.rit.edu/undergraduate/international\\_business/index.php](http://saunders.rit.edu/undergraduate/international_business/index.php)

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.

### International business, BS degree, typical course sequence

	Qtr.	Cr. Hrs.
<b>First Year</b>		
First-Year Enrichment 1720-051, 052		2
Business 1: Ideas and Creativity 0102-260		4
Business 2: Computer-Based Analysis 0112-275		2
Business 3: Commercialization 0112-280		4
Principles of Microeconomics 0511-211		4
Principles of Macroeconomics 0511-402		4
Professional Communication for Business 0535-352		4
Calculus for Management Science 1016-226		4
Data Analysis I, II 1016-319, 320		10
Liberal Arts*		12
Wellness Education†		0
<b>Second Year</b>		
Financial and Management Accounting 0101-301, 302		8
Careers in Business 0102-305		1
Global Business: An Introduction 0113-310		4
Corporate Finance 0104-350		4
Principles of Marketing 0105-363		4
Foreign Language§		12
Liberal Arts*		12
Laboratory Sciences		8
<b>Third Year</b>		
Organizational Behavior 0102-320		4
Business Ethics 0102-438		4
Co-major Courses		8
Liberal Arts*		12
Choose three of the following:		12
Managing in the Global Environment 0113-400		
Global Business: Special Issues 0113-430		
Finance in the Global Environment 0104-504		
Marketing in the Global Environment 0113-450		
Cooperative Education‡		Co-op
<b>Fourth Year</b>		
Strategy in Global Environment 0113-500		4
Strategy and Policy 0102-551		4
Operations and Supply Chain Management 0106-401		4
Managing Innovation and Technology 0102-530		4
Co-major Courses		8
Free Electives		8
General Education		4
Choose one of the following:		4
Business, Government and Society 0102-507		
Legal Environment of Business 0110-319		

**Total 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.

Note: Fluency in a foreign language offered by RIT is a requirement of this program. It 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 another foreign language.

## Management

[saunders.rit.edu/undergraduate/management/index.php](http://saunders.rit.edu/undergraduate/management/index.php)

The management major 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.

### Management, BS degree, typical course sequence

	Qtr.	Cr. Hrs.
<b>First Year</b>		
First-Year Enrichment 1720-051, 052		2
Business 1: Ideas and Creativity 0102-260		4
Business 2: Computer-Based Analysis 0112-275		2
Business 3: Commercialization 0112-280		4
Principles of Microeconomics 0511-211		4
Principles of Macroeconomics 0511-402		4
Professional Communication for Business 0535-352		4
Calculus for Management Science 1016-226		4
Data Analysis I, II 1016-319, 320		10
Liberal Arts*		12
Wellness Education†		0
<b>Second Year</b>		
Financial and Management Accounting 0101-301, 302		8
Careers in Business 0102-305		1
Global Business: An Introduction 0113-310		4
Corporate Finance 0104-350		4
Principles of Marketing 0105-363		4
Liberal Arts*		12
Free Electives		8
General Education		4
Laboratory Sciences		8
<b>Third Year</b>		
Organizational Behavior 0102-320		4
Business Ethics 0102-438		4
Human Resource Management 0102-455		4
Entrepreneurship 0102-490		4
Liberal Arts*		12
Free Elective		4
General Education		8
Cooperative Education‡		Co-op
<b>Fourth Year</b>		
Leadership in Organizations 0102-460		4
Managing Innovation and Technology 0102-530		4
Business, Government and Society 0102-507		4
Strategy and Policy 0102-551		4
Operations and Supply Chain Management 0106-401		4
Management Elective		4
Free Electives		8
General Education		8
<b>Total Quarter Credit Hours</b>		<b>183</b>

\*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

[saunders.rit.edu/undergraduate/mis/index.php](http://saunders.rit.edu/undergraduate/mis/index.php)

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.

**Management information systems, BS degree, typical course sequence**

	Qtr. Cr. Hrs.
<b>First Year</b>	
First-Year Enrichment 1720-051, 052	2
Business 1: Ideas and Creativity 0102-260	4
Business 2: Computer-Based Analysis 0112-275	2
Business 3: Commercialization 0112-280	4
Principles of Microeconomics 0511-211	4
Principles of Macroeconomics 0511-402	4
Professional Communication for Business 0535-352	4
Calculus for Management Science 1016-226	4
Data Analysis I, II 1016-319, 320	10
Liberal Arts*	12
Wellness Education†	0
<b>Second Year</b>	
Financial and Management Accounting 0101-301,302	8
Careers in Business 0102-305	1
Global Business: An Introduction 0113-310	4
Corporate Finance 0104-350	4
Principles of Marketing 0105-363	4
Developing Business Applications 0112-331	4
Database Management Systems 0112-340	4
Systems Analysis and Design 0112-370	4
Liberal Arts*	12
Laboratory Sciences	8
<b>Third Year</b>	
Organizational Behavior 0102-320	4
Business Ethics 0102-438	4
Legal Environment of Business 0110-319	4
Emerging Business Technologies 0112-390	4
Liberal Arts*	12
Free Electives	8
General Education	4
Cooperative Education‡	Co-op
<b>Fourth Year</b>	
Strategy and Policy 0102-551	4
Operations and Supply Chain Management 0106-401	4
MIS Capstone 0112-525	4
Managing Innovation and Technology 0102-530	4
MIS Elective	4
Free Electives	8
General Education	12
<b>Total Quarter Credit Hours</b>	<b>183</b>

\* 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**

[saunders.rit.edu/undergraduate/marketing/index.php](http://saunders.rit.edu/undergraduate/marketing/index.php)

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.

**Marketing, BS degree, typical course sequence**

	Qtr. Cr. Hrs.
<b>First Year</b>	
First-Year Enrichment 1720-051, 052	2
Business 1: Ideas and Creativity 0102-260	4
Business 2: Computer-Based Analysis 0112-275	2
Business 3: Commercialization 0112-280	4
Principles of Microeconomics 0511-211	4
Principles of Macroeconomics 0511-402	4
Professional Communication for Business 0535-352	4
Calculus for Management Science 1016-226	4
Data Analysis I, II 1016-319, 320	10
Liberal Arts*	12
Wellness Education†	0
<b>Second Year</b>	
Financial and Management Accounting 0101-301, 302	8
Careers in Business 0102-305	1
Global Business: An Introduction 0113-310	4
Corporate Finance 0104-350	4
Principles of Marketing 0105-363	4
Liberal Arts*	12
Free Elective	4
General Education	8
Laboratory Sciences	8
<b>Third Year</b>	
Organizational Behavior 0102-320	4
Buyer Behavior 0105-505	4
Professional Selling 0105-559	4
Marketing Elective	4
Liberal Arts*	12
General Education	12
Cooperative Education‡	Co-op
<b>Fourth Year</b>	
Business Ethics 0102-438	4
Business, Government and Society 0102-507	4
Strategy and Policy 0102-551	4
Marketing Management 0105-550	4
Marketing Research 0105-551	4
Operations and Supply Chain Management 0106-401	4
Managing Innovation and Technology 0102-530	4
Marketing Elective	4
Free Electives	8
<b>Total Quarter Credit Hours</b>	<b>183</b>

\* 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**

[saunders.rit.edu/undergraduate/new\\_media\\_marketing/index.php](http://saunders.rit.edu/undergraduate/new_media_marketing/index.php)

The new media marketing program is an interdisciplinary major with 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.

### New media marketing, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
First-Year Enrichment 1720-051, 052	2
Business 1: Ideas and Creativity 0102-260	4
Business 2: Computer-Based Analysis 0112-275	2
Business 3: Commercialization 0112-280	4
Principles of Microeconomics 0511-211	4
Principles of Macroeconomics 0511-402	4
Professional Communication for Business 0535-352	4
Calculus for Management Science 1016-226	4
Data Analysis I, II 1016-319, 320	10
Digital Foundations 2083-216	4
Liberal Arts*	8
Wellness Education†	0
<b>Second Year</b>	
Financial and Management Accounting 0101-301, 302	8
Careers in Business 0102-305	1
Global Business: An Introduction 0113-310	4
Corporate Finance 0104-350	4
Principles of Marketing 0105-363	4
Typography and Page Design 2083-217	4
Imaging for New Media 2083-206	4
Liberal Arts*	16
Laboratory Sciences	8
<b>Third Year</b>	
Organizational Behavior 0102-320	4
Business Ethics 0102-438	4
Internet Marketing 0105-440	4
Integrated Marketing Communications 0105-560	4
Business Elective	4
Media Elective	4
Liberal Arts*	12
General Education	4
Cooperative Education‡	Co-op
<b>Fourth Year</b>	
Business, Government and Society 0102-507	4
Strategy and Policy 0102-551	4
Business Elective	4
Operations and Supply Chain Management 0106-401	4
Managing Innovation and Technology 0102-530	4
Free Electives	8
General Education	12
<b>Total Quarter Credit Hours</b>	<b>183*</b>

\* 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.



# B. Thomas Golisano College of Computing and Information Sciences

*Jorge L. Díaz-Herrera, Ph.D., Dean*

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 18 bachelor's and master's degree programs in computing.

Since the college was established in 2001, over 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.

## 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 and resources

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 department 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 when they are being used 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 departments, faculty offices, classrooms, and study and lounge space. The close proximity of the college's departments and labs encourages joint projects as well as interaction among students in different programs outside the college.

## Advising

As part of its commitment to student success, the Golisano College provides both academic advising and career counseling. Students have access to their department chairperson, a faculty adviser, a professional 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, the department office staff provides support for registration and help with records and scheduling. Part-time and evening students can arrange for these services at night by appointment.

## 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 counselors also can provide students with information concerning the co-op experience.

## Computer Science

**Paul T. Tymann, Chair**

[www.cs.rit.edu](http://www.cs.rit.edu)

The department of computer science offers programs leading to a bachelor or master of science degree in computer science. At the undergraduate level, high school graduates enter as first-year students, and students with prior college work may enter as first- or second-year students or even upper-division students, depending on the amount and nature of prior work. In addition, the computer science program is offered to part-time students in an evening format.

The bachelor of science program, which is fully accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700, 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 experiences, many as members of a team. The laboratories that support these experiences are limited to 16 to 20 students each, providing an effective means of 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.

#### Computer science, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Computer Science 1, 2, 3 4003-231, 232, 233	12
	Calculus I, II, III 1016-281, 282, 283	12
	Discrete Mathematics I, II 1016-265, 1016-366	8
	Liberal Arts *	16
	First-Year Enrichment I, II 1720-051, 052	2
	Wellness Education†	0
<b>Second Year</b>	Computer Science 4 4003-334	4
	Software Engineering 4010-361	4
	Computer Organization 4003-345	4
	Professional Communications 4003-341	4
	Probability 1016-351	4
	Lab Science**	12
	Liberal Arts*	12
	Free Elective#	4
	Wellness Education†	0

<b>Third, Fourth and Fifth Years</b>	Introduction to Computer Science Theory 4003-380	4
	Operating Systems I 4003-440	4
	Data Communications and Networks I 4003-420	4
	Programming Language Concepts 4003-450	4
	Computer Science-Related Electives‡	8
	Computer Science Electives	16
	Related Electives§	12
	Liberal Arts*	24
	Science Electives	8
	Free Elective#	8
	Cooperative Education (four quarters required)	Co-op
	<b>Total Quarter Credit Hours</b>	<b>190</b>

\*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).

‡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.

§Related electives may be chosen from any discipline other than computer science or software engineering.

#### Evening programs

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**

		Qtr. Cr. Hrs.
<b>Computer Science</b>	Computer Science 1, 2, 3, 4 4003-231, 232, 233, 334	16
	Professional Communications 4003-341	4
	Software Engineering 4010-361	4
	Computer Organization 4003-345	4
	Introduction to CS Theory 4003-380	4
	Programming Language Concepts 4003-450	4
	Data Communications and Networks I 4003-420	4
	Operating Systems I 4003-440	4
	Computer Science-Related Electives‡	8
	Computer Science Electives	16
<b>Liberal Arts</b>	Liberal Arts*	52
	Wellness Education†	0
<b>Mathematics and Science</b>	Calculus I, II, III 1016-281, 282, 283	12
	Probability 1016-351	4
	Discrete Mathematics 1016-265, 366	8
	Science Electives	8
	<i>Choose one science sequence:</i>	12
	Physics I, II, III 1017-311, 312, 313	
	Chemistry I, II, III 1011-215, 216, 217, 205, 206, 227	
Biology I, II, III 1001-201, 202, 203, 205, 206, 207		
<b>Other</b>	First-Year Experience I(1720-050/051)	2
	Wellness Education†	0
	Free Electives	12
	Related Electives**	12
	Cooperative Education (four quarters required)	Co-op
<b>Total Quarter Credit Hours</b>		<b>190</b>

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

†Please see Wellness Education Requirement for more information.

‡The computer science-related electives requirement requires 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.

\*\*Related electives may be chosen from any discipline other than computer science or software engineering.



**Information Sciences and Technologies**

**Jeffrey A. Lasky, Chair**

[www.ist.rit.edu](http://www.ist.rit.edu)

The programs offered by the department of information sciences and technologies prepare graduates to design, build, and deploy systems to meet the information needs of end users in all sectors of society. The department offers programs in information technology and medical informatics.

**Information Technology**

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 and 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, 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.

These core competencies provide a foundation for developing greater depth in specialized concentration areas. Students must choose two concentrations from the following: website development, database technology, game design and development, interactive multimedia development, network and system administration, learning and performance development, 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.



When first introduced in 1992, RIT's BS degree program in information technology was the first such program in the world, and was the only undergraduate program of its kind in the United States for several years thereafter. RIT was a founding member of the Association for Computing Machinery's Special Interest Group for IT Education. In 2005, RIT's IT program became the first information technology program to become accredited by the Computing Accreditation Commission of ABET, Market 111 Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700. In sum, RIT has been the leader in defining information technology as an academic discipline, and our program provides students with unrivaled career preparation, as well as with a strong foundation for pursuing graduate studies.

## 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.

## Part-time study

- The AAS and BS degrees in information technology are available on a part-time basis. Courses in these programs are available during the day and in the evening to accommodate those who work. The typical evening student requires approximately 12 quarters to complete all the course requirements for an associate-level degree and 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 BS degree requirements in 12 quarters.

## Information technology, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<i>First Year</i>	Freshman Seminar 4002-201	1
	Introduction to Multimedia: The Internet and the Web 4002-320	4
	Programming for Information Technology I, II, III 4002-217, 218, 219	12
	Cyber Self-Defense 4050-220, 221	4
	Algebra and Trigonometry 1016-204	4
	Discrete Math for Technologists I, II 1016-205, 206	8
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
<i>Second Year</i>	Computer System Fundamentals 4050-350	4
	Network Fundamentals 4050-351	4
	Interactive Digital Media 4002-330	4
	Introduction to Database and Data Modeling 4002-360	4
	HCI 1: Human Factors 4002-425	4
	Data Analysis 1016-319	4
	Liberal Arts*	12
	Lab Science Elective	8
Free Elective	4	

<i>Third and Fourth Years</i>	Cooperative Education (3 quarters required after year two)	Co-op
	Needs Assessment 4002-455	4
	HCI 2: Interface Design and Development 4002-426	4
	Technology Transfer 4002-460	4
	IT Concentration Courses‡	24
	Liberal Arts*	12
	Free Electives	20
	General Education Electives	18
<b>Total Quarter Credit Hours</b>		<b>181</b>

\* 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 website development, interactive multimedia development, game development, network and system administration, database, learning and performance technology, advanced application development, and special topics. A six-course Web-database integration track also is available.

## Information technology, AAS degree, typical course sequence

		Qtr. Cr. Hrs.
<i>First Year</i>	Introduction to Multimedia: The Internet and the Web 4002-320	4
	Programming for Information Technology I, II, III 4002-217, 218, 219	12
	Cyber Self-Defense 4050-220, 221	4
	Algebra and Trigonometry 1016-204	4
	Discrete Math for Technologists I, II 1016-205, 206	8
	Liberal Arts*	12
<i>Second Year</i>	Interactive Digital Media 4002-330	4
	Computer System Fundamentals 4050-350	4
	Network Fundamentals 4050-351	4
	Introduction to Database and Data Modeling 4002-360	4
	HCI 1: Human Factors 4002-425	4
	IT Electives	8
	Lab Science Electives	8
	Liberal Arts*	8
	Free Elective	4
	Wellness Education†	0
<b>Total Quarter Credit Hours</b>		<b>92</b>

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

† Please see Wellness Education Requirement for more information.

## Medical Informatics

### Nicolas A. Thireos, Program Director

[www.medinfo.rit.edu](http://www.medinfo.rit.edu)

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.

Students can choose one of two tracks: computer science, for those students 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.

### 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 students with the opportunity to apply their classroom knowledge in real-life situations, and gives students the chance to network with professionals in the field before they graduate. Students will 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. Those students interested in applying to medical, dental, or veterinary school after graduation should follow the computer science track or the information technology track but should replace some of the computing courses with physics and organic chemistry. For more information, contact the program director, Nicolas Thireos, at (585) 475-6511, or e-mail at natvkm@rit.edu.

### 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.

### 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.

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

	Qtr. Cr. Hrs.
First Year	
Computers in Medicine 4006-230	4
Introduction to Medical Informatics 4006-240	4
Computer Science 4003-231, 232, 233	12
Introduction to Multimedia: Web 4002-320	4
Medical Terminology 1026-301	3
Project-Based Calculus 1016-281, 282	8
Discrete Mathematics 1016-265	4
Liberal Arts*	8
Freshman Seminar 4002-201	1
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0

Second Year	
Developing Medical Applications 4006-310	4
The Electronic Health Record 4006-410	4
Medical Informatics Seminar 4006-345	1
Computer Science 4 4003-334	4
Database Concepts 4003-485	4
Medical Database Architectures 4006-420	4
General Biology I, II, III 1001-201, 202, 203	9
General Biology Lab 1001-205, 206, 207	3
Probability and Statistics 1016-351	4
Liberal Arts*	4
Free Elective	4

Third Year	
Medical Application Integration 4006-430	4
Computer Organization 4003-345	4
Data Communication and Networks 4003-420	4
Software Engineering 4010-361	4
Computing Elective	4
Anatomy and Physiology 1026-350, 360	10
Diagnostic Medical Imaging 1026-205	2
Liberal Arts*	8
Free Elective	4
Wellness Education†	0
Cooperative Education 4002-499	Co-op

Fourth Year	
Computing Electives	12
General and Analytical Chemistry 1011-215, 216, 217	10
General and Analytical Chemistry Lab 1011-205, 206, 227	3
Liberal Arts*	16
Free Elective	4
Cooperative Education 4002-499	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

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

Second Year	
Developing Medical Applications 4006-310	4
The Electronic Health Record 4006-410	4
Medical Informatics Seminar 4006-345	1
Database and Data Modeling 4002-360	4
Fundamental Data Modeling 4002-461	4
Medical Database Architectures 4006-420	4
General Biology I, II, III 1001-201, 202, 203	9
General Biology Lab 1001-205, 206, 207	3
Data Analysis 1016-319	4
Liberal Arts*	4
Free Elective	4

Third Year	
Medical Application Integration 4006-430	4
Information Technology Electives	8
Computer System Fundamentals 4050-350	4
Network Fundamentals 4050-351	4
Anatomy and Physiology 1026-350, 360	10
Diagnostic Medical Imaging 1026-205	2
Liberal Arts*	8
Free Elective	4
Wellness Education†	0

<i>Fourth Year</i>	Information Technology Electives	12
	General and Analytical Chemistry 1011-215, 216, 217	10
	General and Analytical Chemistry Lab 1011-205, 206, 227	3
	Liberal Arts*	16
	Free Elective	4
	Cooperative Education 4002-499	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.

## Interactive Games and Media Department

### Andrew Phelps, Chair

[www.igm.rit.edu](http://www.igm.rit.edu)

The study of media-centric computing has recently emerged as a unique academic discipline that focuses on creating new technology as a means of expression and as a tool for the conveyance of message. Students entering our programs typically arrive with questions such as: How can I create video games? How can I build experiences/entertainment I can share with others online? Can I impact the ways people communicate with each other online? How can I express myself with a computer?

The degree programs in the interactive games and media department are designed to look for new ways of using games, multimedia, and social connections for a wide range of applications and uses. The programs focus on more than just the technology they emphasize the systems used to drive message and deliver content. Our goal is to create highly technical applications and installations to create meaningful, memorable, and entertaining experiences.

The department offers two degree programs. The BS in game design and development, which focuses on entertainment software and related areas such as simulation, visualization, and interactive software development, and a BS in new media interactive development, which explores a wide range of media computing topics in tandem with its partner programs in new media located within the College of Imaging Arts and Sciences. ABET does not accredit programs in these areas at this time.

### Laboratories

Students in interactive games and media have access to specialized facilities within the department, as well as campus-wide resources. The game design and development laboratory offers students a state-of-the-art development facility designed in consultation with industry leaders at major game development companies. Stocked with hardware from Alienware® and a plethora of development packages to the latest 3D animation software, this laboratory is a premiere facility of its kind. The department offers access to the new media laboratory, which is specifically designed around workflow issues for multi-disciplinary teams, and features software that was provided to the lab through our status as an Adobe® Education Developer Partner.

## Game Design and Development

### Andrew Phelps, Chair

[games.rit.edu](http://games.rit.edu)

The BS in game design and development allows students to explore the entertainment technology landscape, as well as related areas, while still 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.

### Program overview

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.

### Cooperative education

Students are required to complete three quarters of cooperative education in this program. 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, which gives them an 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.

## Game design and development, BS degree, typical course sequence

		Qtr. Cr. Hrs.	
<b>First Year</b>	Freshman Seminar in Game Design and Development 4080-201	1	
	Game Software Development I, II, III 4080-221, 222, 223	12	
	Introduction to Interactive Media 4080-299	4	
	Algebra and Trigonometry 1016-204	4	
	Discrete Math for Technologists I, II 1016-205, 206	8	
	College Physics I, II 1017-211, 212	8	
	Liberal Arts*	12	
	Wellness Education†	0	
	First-Year Enrichment 1105-051, 052	2	
	<b>Second Year</b>	Interactive Digital Media 4080-330	4
Introduction to Database and Data Modeling 4002-360		4	
2D Animation for Interactive Media 4080-346		4	
3D Modeling and Animation for Interactive Media 4080-347		4	
Introduction to Website Design 4080-309		4	
Fundamentals of Game Design and Development I, II 4080-380, 381		8	
Data Structures and Algorithms for Game Design and Development I 4080-387		4	
Networking Essentials 4050-210		4	
Analytic Geometry 1016-228		4	
Liberal Arts*		8	
<b>Third and Fourth Years</b>		Cooperative Education‡	Co-op
		Visual C++ for Programmers 4080-417	4
Programming for Digital Media 4080-434	4		
HCI1: Human Factors 4002-425	4		
Data Structures and Algorithms for Game Design and Development II 4080-487	4		
Advanced Studies**	20		
Liberal Arts*	16		
General Education Electives	18		
Free Electives	12		
<b>Total Quarter Credit Hours</b>		<b>181</b>	

\* 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 area such as computer graphics programming, multi-user interactivity, animation, artificial intelligence, writing for interactive media, and database/server programming.

## New Media Interactive Development

**Andrew Phelps, Chair**

[interactive.rit.edu](http://interactive.rit.edu)

The last decade has seen unprecedented innovation in technologies for communication, computation, interactivity, and delivery of information. New media touches 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 is dynamic, personalized, and connected. It changes 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.

### Program overview

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

		Qtr. Cr. Hrs.
<b>First Year</b>	Introduction to New Media Interactive Development 4080-229	4
	Introduction to Interactive Media 4080-299	4
	Imaging for New Media 2083-206	4
	Introduction to Programming for New Media 4080-230	4
	Programming II for New Media 4080-231	4
	Elements of Graphic Design 2009-213	3
	Networking Essentials 4050-210	4
	Introduction to Website Development 4080-309	4
	Wellness Education†	0
	Algebra and Trigonometry 1016-204	4
Liberal Arts*	12	
First-Year Enrichment 1105-051, 052	2	
<b>Second Year</b>	Programming III for New Media 4080-333	4
	Programming IV for New Media 4080-334	4
	New Media Studio Electives**	6-8
	Design of the Graphical User Interface 4080-323	4
	New Media Web Technologies I 4080-431	4
	New Media Web Technologies II 4080-432	4
	Discrete Math for Technologists I, II, 1016-205, 206	8
	Liberal Arts*	12
	Cooperative Education (three quarters required)	Co-op

<i>Third and Fourth Years</i>	New Media Advanced Electives‡	24
	Data Analysis 1016-319	4
	Lab Science Electives	8
	Liberal Arts*	12
	General Education Electives	18
	Free Electives	12
	New Media Team Project I, II 4080-560, 565	8
<b>Total Quarter Credit Hours</b>		<b>180-182</b>

‡Please see Wellness Education Requirement for more information.

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

\*\* Two courses selected out of a pool of five courses on topics such as animation, video, typography, and game design.

‡Six advanced new media courses forming a track decided by the student, in consultation with his or her adviser.

## Networking, Security, and Systems Administration

**Sylvia Perez-Hardy, Chair**

[www.nssa.rit.edu](http://www.nssa.rit.edu)

Almost all business enterprises employ and depend on the flow of information, which depends on networks. Servers within networks act as repositories for this information and provide it to end users when needed.

The advent of the Web elevated the importance of computer networking and system administration. At the same time, it exposed networks and servers, and the enterprises that depend on them, to a new level of security threat. Being able to balance the need for instant information and the security of that information is a critical capability of any business, regardless of size.

Students preparing to enter careers as providers of this technology, or as watchdogs of the information it contains, need skills in many areas, including:

- Computer system design and configuration
- Operating system architecture
- Data communications and networking protocols
- Local area network (LAN) design and implementation
- Routing and switching protocols
- Network services installation, configuration, and protocol design
- Network design and performance
- Server installation, configuration, and performance
- Network and server security
- Computer and network forensics
- Unix and Windows operating systems
- Programming and scripting
- Security audits

Students can choose the BS in applied networking and systems administration for an in-depth education in networking/systems administration, or they can select the BS degree in information security and forensics if they choose to specialize in the security of networks and computer systems.

The BS program in applied networking and systems administration is fully accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700.

RIT has been designated a National Center of Academic Excellence in Information Assurance Education by the National Security Agency. More than 90 percent of the curriculum that supports this designation comes from curriculum developed and taught by the NSSA department's faculty.

## Applied Networking and System Administration

Networking is the technology of interconnecting multiple computers so that 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.

System 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.

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

### Program overview

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

The networking and system administration degree contains 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 study

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
- 4050-520 Advanced Switching in Data Communications
- 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
- 4050-582 Wireless Ad-Hoc/Sensor Networks

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

### Network Administration

- 4050-519 Network Troubleshooting
- 4050-520 Advanced Switching in Data Communication
- 4050-521 Perl for System Administration
- 4050-540 Network Design and Performance
- 4050-545 Advanced Routing

### Systems Administration

- 4050-422 System Administration II
- 4050-423 System Administration III
- 4050-519 Network Troubleshooting
- 4050-521 Perl for System Administration
- 4050-540 Network Design and Performance

### Wireless Networking

- 4050-403 Wireless Network Concepts
- 4050-520 Advanced Switching in Data Communication
- 4050-540 Network Design and Performance
- 4050-545 Advanced Routing
- 4050-582 Wireless Ad-Hoc/Sensor Networks

### 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 provides them with 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.

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

		Qtr. Cr. Hrs.	
<b>First Year</b>	Freshman Seminar 4050-201	2	
	Programming for Information Technology I, II, III 4002-217, 218, 219	12	
	Computer System Fundamentals 4050-350	4	
	Cyber Self-Defense 4050-220, 221	4	
	Introduction to Multimedia: The Internet and the Web 4002-320	4	
	Algebra and Trigonometry 1016-204	4	
	Discrete Math for Technologists I, II 1016-205, 206	8	
	Liberal Arts*	12	
	First-Year Enrichment 1105-051, 052	2	
	Networking Fundamentals 4050-351	4	
<b>Second Year</b>	OS Scripting 4050-402	4	
	Introduction to Routing and Switching 4050-515	4	
	System Administration I 4050-421	4	
	Application of Wireless Networks 4050-413	4	
	Introduction to Database and Data Modeling 4002-360	4	
	Data Analysis 1016-319	4	
	Lab Science Electives	8	
	Liberal Arts*	8	
	<b>Third, Fourth, and Fifth Years</b>	Cooperative Education (three quarters required after year two)	Co-op
		Network Services 4050-516	4
Needs Assessment 4002-455		4	
Technology Transfer 4002-460		4	
Advanced Track Courses‡		20	
Liberal Arts*		16	
Free Electives		20	
General Education Electives		14	
Wellness Education**		0	
Communication Elective		4	
<b>Total Quarter Credit Hours</b>		<b>182</b>	

\* Please see Liberal Arts General Education Requirement for more information.

‡A five-course advanced work track is required. Suggested tracks include network administration, system administration, wireless networking, or information assurance.

\*\* Please see Wellness Education Requirement for more information.

### Information Security and Forensics

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. 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 will become experts in the identification of computer security vulnerabilities. Students will 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.

## Program overview

The BS degree in information security and forensics 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 the 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 credit hours of core courses, students will select one of two advanced tracks for 16 credit hours.

## Advanced study

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

### Network and wireless security advanced track

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 advanced track

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

## Cooperative education

Students will complete three quarters of cooperative education. Co-op students have the opportunity 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 those that are users of information technology (manufacturing companies, school districts, health care). Completing a co-op gives students real-world experience and provides them with 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 summer following the third year or during one of the academic quarters in the student's third or fourth years. Students must complete their co-op requirement prior to completing their course work.

## Part-time study

The program also 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 our part-time undergraduate bulletin for more information on this option.

## Information security and forensics, BS degree, typical course sequence

		Qtr.	Cr.	Hrs.
<b>First Year</b>	Freshman Seminar 4050-201			2
	First-Year Enrichment 1105-051, 052			2
	Cyber Self-Defense 4050-220/221			4
	C++ Programming I, II, 4002-208, 210			8
	Computer System Fundamentals 4050-350			4
	Network Fundamentals 4050-351			4
	Algebra and Trigonometry 1016-204			4
	Discrete Math for Technologists I, II 1016-205, 206			8
	Liberal Arts*			12
<b>Second Year</b>	Application of Wireless Networks 4050-413			4
	Operating System Scripting 4050-402			4
	Client/Server Programming 4050-212			4
	Information Security Policies 4050-360			4
	Introduction to Routing and Switching 4050-515			4
	System Administration I 4050-421			4
	Ethics in Information Technology 4002-415			4
	Cryptography and Authentication 4050-365			4
	Data Analysis 1016-319			4
	Lab Science Electives			8
	Liberal Arts*			12
	Wellness Education**			0
<b>Third Year</b>	Introduction to Computer Malware 4050-460			4
	Network Services 4050-516			4
	Needs Assessment 4002-455			4
	Advanced Track Courses‡			4
	Liberal Arts*			12
	Free Electives			12
	Communications Elective			4
	Cooperative Education 4050-499 (2 blocks)			Co-op
	Wellness Education**			0
<b>Fourth Year</b>	Advanced Track Courses‡			12
	General Education Electives			14
	Free Electives			8
	Cooperative Education 4050-499			Co-op
<b>Total Quarter Credit Hours</b>				<b>182</b>

\*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.

## Software Engineering

**J. Fernando Naveda, Chair**

[www.se.rit.edu](http://www.se.rit.edu)

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

Students in the software engineering program 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.

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 software engineering 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. In the third year, all students must demonstrate writing competency in the English language by successfully completing a departmental writing exercise evaluated by faculty from the Institute Writing Committee. For some students, this may require work with the Academic Support Center or additional course work in the College of Liberal Arts.

### **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, PaTec 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.

### **Laboratories**

Students in software engineering have access to specialized facilities within the department as well as campus-wide facilities. Equipped with the latest technology, the 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 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. Six of the team rooms are furnished with state-of-the-art projection equipment.

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

### **Cooperative education**

Students in the software engineering program 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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Seminar 4010-101	1
Computer Science 1, 2, 3 4003-231, 232, 233	12
Calculus I, II, III 1016-281, 282, 283	12
Discrete Mathematics I, II 1016-265, 366	8
Liberal Arts*	8
Wellness Education†	0
First-Year Enrichment I, II 1105-051, 052	2
<b>Second Year</b>	
Personal Software Engineering 4010-350	4
Software Engineering 4010-361	4
Engineering of Software Subsystems 4010-362	4
Professional Communications 0535-351	4
University Physics I 1017-311	4
<i>Choose one of the following science sequences:</i>	8
University Physics II, III 1017-312, 313	
Chemical Principles I, II, and Labs 1011-215, 216, 205, 206	
General Biology I, II and Labs 1001-201, 202, 205, 206	
Engineering and Statistics 1016-314	4
Engineering Fundamentals of Computer Systems 0306-340	4
Introduction to Computer Science Theory 4003-380	4
Liberal Arts*	8
Wellness Education†	0
<b>Third, Fourth and Fifth Years</b>	
Math/Science Elective**	4
Software Process and Project Management 4010-456	4
Engineering Methods for Software Usability 4010-444	4
Principles of Concurrent Systems 4010-441	4
Principles of Software Architecture and Design 4010-540	4
Formal Methods of Specification and Design 4010-420	4
Software Requirements Engineering 4010-555	4
Software Engineering Project 1, 2 4010-561, 562	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
<b>Total Quarter Credit Hours</b>	<b>195</b>

\* 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.

The elected course must be taken during or after the year given in parenthesis:

1011-208 College Chemistry (First Year)

1011-201 General Biology (First Year)

1016-331 Matrix Algebra (Second Year)

1016-365 Combinatorial Mathematics (Second Year)

or

1016-306 Differential Equations (Second Year)

1016-467 Theory of Graphs and Networks (Third Year)

‡ Students must choose three of the following four courses:

4010-442 Principles of Distributed Software Systems

4010-443 Principles of Information Systems Design

4010-450 Software Process and Product Quality

4010-452 Software Testing

4010-556 Agile Software Development

§ 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.

# 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.





# Kate Gleason College of Engineering

Harvey Palmer, Dean

[www.rit.edu/kgcoe](http://www.rit.edu/kgcoe)

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 chemical, electrical, computer, 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 of each program 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 occurs sometime during the third 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 in the college offer the flexibility of pursuing minors in the full range of academic disciplines at RIT, 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-life 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 decisionmaking 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 liberal arts studies and technical courses,
- establishing an appropriate balance between the engineering design and engineering science components of the program,
- incorporating a strong laboratory component in the program with 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 with 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.

## 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 classroom with on-the-job experience. The exposure is invaluable in bringing the engineering discipline to life for students, providing a meaningful context for the abstract concepts that are scrutinized in the classroom. Co-op experiences also acquaint students with the constraints imposed by the industrial environment on the solution of real-life 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 in their third year of study, at a time when their educational background qualifies them for jobs that require meaningful engineering expertise. An example of the sequence of co-op and academic quarters follows:

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. The college is in the process of launching a BS degree in biomedical engineering that is pending state approval.

### Academic advising

Upon entry into the Kate Gleason College, each student is assigned an 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.

### Honors program

The Honors program is designed to enrich the academic and professional experiences of some of the best students who apply to RIT. In addition to participating in a special college-level Honors curriculum, designed to stimulate and challenge exceptional

students, Honors participants have access to distinctive courses throughout RIT, receive special advising within the college, and enjoy privileges such as early registration and access to special housing.

The Honors curriculum is focused 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. These trips expose students to best practices in the development and engineering of new products along with the international dimensions of engineering practice. Travel destinations may include both domestic (e.g., San Francisco, Orlando) and international (e.g., Barcelona, Prague) locations. In the fourth or fifth year, students may choose to take advantage of a growing number of opportunities for study abroad, co-op placement outside the United States, or a design partnership with students at an international university. Seminars and social events with engineering faculty and advisers round out the program.

### Careers

Graduates are well-prepared to enter the workforce and provide immediate value to their employer in the full spectrum of engineering-related jobs, including applied research, product and process development, engineering design, systems engineering, project management, technical marketing, and sales. In addition, an engineering education provides an excellent foundation for continued study in business, law, and medicine. Many of our graduates continue their education, pursuing a master of science, master of engineering or doctor of philosophy degree.

### 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. In addition, student chapters of professional organizations such as the Society of Women Engineers, the National Society of Black Engineers, and the Society of Hispanic Professional Engineers offer students opportunities for personal and professional growth.

### 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.

### Graduate degrees

Programs leading to a master of science degree are offered in computer, electrical, industrial, mechanical, and microelectronic engineering as well as applied statistics. Because many of the courses are offered in the late afternoon and early evening, these programs may be pursued on a full- or part-time basis. In addition, the college offers post-baccalaureate professional programs leading to the master of engineering degree, which emphasizes

## Chemical Engineering

**Steven Weinstein, Head**

[www.rit.edu/kgcoe/chemical](http://www.rit.edu/kgcoe/chemical)

### 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.

### Program

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 new 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 BS program in chemical engineering will have a firm and practical grasp of engineering principles and 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

engineering practice and leadership. Study may be pursued in industrial engineering, mechanical engineering, engineering management, microelectronic manufacturing engineering, and systems engineering. These graduate programs also may be pursued on a full- or part-time basis.

The college also offers a program leading to the master of science degree in materials science and engineering, in conjunction with the College of Science, and a program earning a master of science in science, technology, and public policy and engineering in collaboration with the College of Liberal Arts. There are also two MS degree programs that incorporate significant study in the E. Philip Saunders College of Business: one in manufacturing leadership and the other in product development.

### Engineering Exploration

[www.rit.edu/kgcoe/undergrad/undeclared](http://www.rit.edu/kgcoe/undergrad/undeclared)

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.

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 six 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\*\*

		Qtr. Cr. Hrs.
<b>Fall</b>	Calculus I 1016-281	4
	College Chemistry 1011-208	4
	Introduction to Engineering 0302-210	1
	Liberal Arts*	8
	First-Year Enrichment 1105-051	1
<b>Winter</b>	Calculus II 1016-282	4
	Engineering class of interest	4
	University Physics I 1017-311	4
	Liberal Arts*	4
	First-Year Enrichment 1105-052	1
<b>Spring</b>	Calculus III 1016-283	4
	Engineering class of interest	4
	University Physics II 1017-312	4
	Liberal Arts*	4
	Wellness Education†	0
<b>Total Quarter Credit Hours</b>		<b>51</b>

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

† Please see Wellness Education Requirement for more information.

\*\* For suggested quarterly schedule, consult with your academic adviser.

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

The chemical engineering BS degree is a five-year program consisting of the following course requirements: chemical engineering core (75 credit hours), professional technical electives (12 credit hours), science and mathematics (58 credit hours), liberal arts (36 credit hours), free electives (12 credit hours), wellness education and First-Year Enrichment (2 credit hours), and 50 weeks of cooperative education.

The core of the program consists of 22 courses, which 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, which 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 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\*\*

	Qtr.	Cr. Hrs.
<b>First Year</b>		
Chemical Engineering First-Year Enrichment I, II 0309-051, 052		2
Chemical Engineering Insights I, II, III 0309-081, 082, 083		3
General Chemistry I, II, III 1011-215, 216, 217		10
General Chemistry Lab I, II, III 1011-205, 206, 227		3
University Physics I, II and Labs 1017-311, 312		8
Calculus I, II, III 1016-281, 282, 283		12
Wellness Education†		0
Liberal Arts*		12

<b>Second Year</b>		
Chemical Process Analysis 0309-230		4
Thermo I: Single Component 0309-310		4
Thermo II: Multiple Component 0309-410		4
Fluid Mechanics I, II 0309-320, 420		8
Math Tech for Chemical Engineers 0309-301		3
Organic Chemistry I, II 1013-431, 432		6
Organic Chemistry Lab I, II 1013-435, 436		2
Multiple Variable Calculus 1016-305		4
Differential Equations 1016-306		4
Wellness Education†		0
Liberal Arts*		8

<b>Third Year</b>		
Reaction Engineering I, II 0309-340, 440		8
Heat Transfer 0309-421		4
Mass Transfer Operations 0309-330		4
Chemical Engineering Principles Lab 0309-391		2
Math Tech for Chemical Engineers II 0309-302		2
University Physics III and Lab 1017-313		4
Liberal Arts*		4
Free Elective		4
Cooperative Education (2 quarters)		Co-op

<b>Fourth Year</b>		
Materials Science 0304-344		4
System Dynamics and Controls 0309-401		4
Micro-scale Phenomena 0309-450		4
Analysis of Micro-scale Processes 0309-550		4
Chemical Engineering Processes Lab 0309-392		2
Professional Technical Elective		4
Quantum Chemistry 1014-442		4
Quantum Chemistry Lab 1014-446		1
Liberal Arts*		8
Cooperative Education (2 quarters)		Co-op

<b>Fifth Year</b>		
Multidisciplinary Design I, II 0309-591, 592		8
Design with Constraint 0309-590		4
Professional Technical Electives		8
Liberal Arts*		4
Free Electives		8
Cooperative Education (1 quarter)		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.

\*\* For suggested quarterly schedule, consult with your academic adviser

The following is a sampling of technical electives available to students.

#### Biomedical Technical Electives

- 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 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
- 0304-710 Fuel Cell Technology

#### Environmental Technical Electives

- 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 Technical Electives
- 1029-301 Introduction to Polymer Technology
- 0304-343 Materials Processing
- 0304-644 Introduction to Composite Materials
- 0304-645 Introduction to Biomaterials
- Semiconductor Processing Technical Electives
- 0305-350 IC Technology
- 0305-643 Thin Film Processes
- 0305-666 Microlithography Materials and Processes

## Computer Engineering

**Andreas E. Savakis, Head**

[www.ce.rit.edu](http://www.ce.rit.edu)

### Educational objectives

The computer engineering department has established the following program educational objectives, 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.

### Program

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 frame-

work 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.

The BS program in computer engineering is accredited by ABET (Accreditation Board of Engineering and Technology).

### 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.

### Computer engineering, BS degree, typical course sequence\*\*

		Qtr. Cr. Hrs.
<b>First Year</b>	Introduction to Computer Engineering 0306-200	1
	Freshman Seminar 0306-201	1
	Introduction to Digital Systems 0306-341	4
	Computer Science I, II, III 4003-231, 232, 233	12
	Calculus I, II, III 1016-281, 282, 283	12
	University Physics I 1017-311	4
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Discrete Math I 1016-265	4
	<b>4</b>	
<b>Second Year</b>	Assembly Language Programming 0306-250	4
	Hardware Description Languages 0306-351	4
	Circuits I with Lab 0301-381	4
	Computer Science IV 4003-334	4
	Software Engineering 4010-361	4
	Multivariable Calculus 1016-305	4
	Differential Equations 1016-306	4
	Linear Algebra I 1016-331	4
	University Physics II, III 1017-312, 313	8
	Liberal Arts*	8
Wellness Education†	0	
	<b>4</b>	
<b>Third Year</b>	Computer Organization 0306-550	4
	Digital Systems Design 0306-561	4
	Circuits II 0301-382	4
	Electronics I 0301-481	4
	Applied Programming 0306-381	4
	Operating Systems 4003-440	4
	Engineering Statistics 1016-314	4
	Free Elective	4
	Cooperative Education (2 quarters)	Co-op
	<b>4</b>	
<b>Fourth Year</b>	Digital Signal Processing 0306-451	4
	Data and Computer Communications 0306-694	4
	Interface and Digital Electronics 0306-560	4
	Introduction to VLSI Design 0306-630	4
	Senior Design Projects I 0306-654 or 656	4
	Liberal Arts*	8
	Math/Science Elective	4
	Cooperative Education (2 quarters)	Co-op
	<b>4</b>	
<b>Fifth Year</b>	Computer Architecture 0306-551	4
	Senior Design Projects II 0306-657 or 659	4
	Professional Electives	8
	Free Elective	8
	Liberal Arts*	8
	Cooperative Education (1 quarter)	Co-op
	<b>4</b>	
<b>Total Quarter Credit Hours</b>		<b>196</b>

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

† Please see Wellness Education Requirement for more information.

\*\* For suggested quarterly schedule, consult with your academic adviser.

### 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: 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 in computer engineering

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

#### VLSI Design Concentration

0301-481 Electronics I and 0301-482 Electronics II (replaces 0306-460 Electronics for Computer Engineers and one free elective) 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  
0306-672 Special Topics: Real-Time Operating Systems

#### Networking Concentration

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

#### Robotics Concentration

0306-553 Digital Control Systems plus the following courses as professional electives:  
0306-675 Robotics

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

Additional information on the computer engineering department is available online at [www.ce.rit.edu](http://www.ce.rit.edu).

## Electrical

### Sohail Dianat, Interim Department Head

[www.rit.edu/kgcoe/electrical](http://www.rit.edu/kgcoe/electrical)

## Electrical Engineering

### 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.

### Program

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 from RIT is a stepping stone to entering and changing the future.

The electrical engineering department 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 problems of design 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.

The BS program in electrical engineering is accredited by ABET (Accreditation Board of Engineering and Technology).

#### Electrical engineering, BS degree, typical course sequence\*\*

	Qtr. Cr. Hrs.
<b>First Year</b>	
Electrical Engineering Freshman Practicum 0301-205	1
Digital Systems 0301-240	4
College Chemistry I 1011-208	4
Calculus I, II, III 1016-281, 282, 283	12
University Physics I, II 1017-311, 312	8
Liberal Arts*	20
Wellness Education†	2
First-Year Enrichment 1105-051, 052	2
<b>Second Year</b>	
Semiconductor Devices 0301-360	4
Microcomputer Systems 0301-365	4
Circuits I, II with Lab 0301-381, 382	8
Multivariable Calculus 1016-305	4
Differential Equations 1016-306	4
Engineering Mathematics 1016-328	4
University Physics III 1017-313	4
Choose one of the following courses:	4
Restricted Science Elective 0301-370	
Modern Physics I 1017-314	
Programming Using C 4001-211	4
Liberal Arts*	4
Free Elective	4

<b>Third Year</b>	
Linear Systems I, II 0301-453, 554	8
Electromagnetic Fields I, II 0301-473, 474	9
Electronics I, II with Lab 0301-481, 482	8
Complex Variables 1016-420	4
Free Elective	4
Cooperative Education (2 quarters)	Co-op
<b>Fourth Year</b>	
Engineering Statistics 1016-314	4
Computer Architecture 0301-347	4
Control Systems Design 0301-514	5
Communication Systems 0301-534	5
Digital Electronics 0301-545	4
Optional Free Elective	4
Liberal Arts*	8
Cooperative Education (2 quarters)	Co-op
<b>Fifth Year</b>	
Mechatronics 0301-531	4
Professional Electives	12
Senior Design Project I, II 0301-697, 698	8
Liberal Arts*	4
Cooperative Education (1 quarter)	Co-op

#### Total Quarter Credit Hours

194

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

† Please see Wellness Education Requirement for more information.

\*\* For suggested quarterly schedule, consult with your academic adviser.

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.

### Professional electives

#### Electromagnetic Fields and Optics

0301-601 Modern Optics for Engineers

0301-621 Microwave Engineering

#### Control Systems

0301-615 State Space Control

0301-636 Biorobotics/Cybernetics

0301-647 Artificial Intelligence

0301-685 Principles of Robotics

#### Communications

0301-677 Digital 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

## **BS in electrical engineering with computer engineering option**

The department of electrical engineering offers a bachelor of science degree in electrical engineering with a computer engineering concentration. This is ideal for those who want to be educated within the framework of the traditional electrical engineering program but also 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 has played, and will continue to play, 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 the core engineering disciplines such as electrical engineering. The biomedical engineering option in electrical engineering 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. RIT provides the environment to address these studies. 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 biomedical engineering 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 universitywide 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 the two required professional electives must be chosen from the following:

- 0301-631 Biomedical Sensors and Transducers I
- 0301-633 Biomedical Signal Processing

## **BS in electrical engineering with robotics option**

The department of electrical engineering offers a BS degree in electrical engineering with a robotics option that is ideal for those who want to be educated within the framework of the traditional electrical engineering program but also want to incorporate the theoretical and practical skills required in designing robots and robotics devices. Robotics is coming into everyday life with social and financial implications. Robots and robotic devices become a part of our daily life as a robotic cleaner or a robotic toy. Students in this option receive instructions in areas from advance programming, robotics systems, principles of robotics, and advance robotics. Students in the robotics option are introduced to robotics systems in their third year and experience designing 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 advance robotics course where they 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:  
0301-885 Advance Robotics

## **Microelectronic Engineering**

---

Semiconductor microelectronics technology remains important for the world economy. The semiconductor industry is U.S. manufacturing's star performer. 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 United States, 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

### **Program**

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 and the ability to seek out, integrate, and use ideas from many disciplines. This ABET-accredited, five-year 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.

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 within this unique interdisciplinary program, such as advanced CMOS, VLSI chip design, analog circuit design, electronic materials science, microelectromechanical systems (MEMS), or nanotechnology. 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 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, students are well-prepared to enter the industry or pursue advanced study in 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.

The BS program in microelectronic engineering is accredited by ABET (Accreditation Board of Engineering and Technology).

**Microelectronic engineering, BS degree, typical course sequence \*\***

		Qtr. Cr. Hrs.
<b>First Year</b>	Introduction to Microelectronics 0305-201	4
	Introduction to Micro/Nano Lithography 0305-221	4
	College Chemistry I 1011-208	4
	Calculus I, II, III 1016-281, 282, 283	12
	University Physics I, II 1017-311, 312	8
	Introduction to Digital Systems 0306-341	4
	Liberal Arts*	12
	Wellness Education†	0
	First-Year Enrichment 1105-051, 052	2
	<b>Second Year</b>	Multivariable Calculus 1016-305
Differential Equations 1016-306		4
Engineering Mathematics 1016-328		4
University Physics III 1017-313		4
Modern Physics 1017-314		4
Introduction to Programming 4002-208		4
Semiconductor Devices I 0305-460		4
Statistics for Engineers 0307-315		4
Design of Experiments 0305-320		4
Integrated Circuit Technology 0305-350		4
Circuits 0301-381		4
Free Elective		4
Wellness Education†		0

<b>Third Year</b>	Circuit Analysis II 0301-382	4
	Principles of Electromagnetic Fields 0305-515	4
	Free Elective	4
	Electronics I, II with Labs 0301-481, 482	8
	Semiconductor Devices II 0305-560	4
	Liberal Arts*	8
Cooperative Education (2 quarters)		Co-op
<b>Fourth Year</b>	Optics for Microelectronics 0305-525	4
	Silicon Processes 0305-632	4
	Microlithography Systems with Lab 0305-563, 573	4
	VLSI Design 0305-520	4
	Thin Film Processes 0305-643	4
	Linear Systems 0301-453	4
	Liberal Arts*	8
	Cooperative Education (2 quarters)	
<b>Fifth Year</b>	CMOS Processing Lab 0305-650	4
	Microlithography Materials and Processes with Lab 0305-666, 676	4
	Senior Design Project I, II 0305-681, 691	6
	Two Professional Electives	8
	Free Elective	4
	Liberal Arts *	8
	Cooperative Education (1 quarter)	

**Total Quarter Credit Hours 196**

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

†Please see Wellness Education Requirement for more information.

\*\*For suggested quarterly schedule, consult with your academic adviser.

Two alternative cooperative education plans for the micro-electronic engineering program

Year	Fall	Winter	Spring	Summer
1	RIT	RIT	RIT	—
2	RIT	RIT	RIT	Vacation
3	Co-op	RIT	RIT	Co-op
4	Co-op	RIT	RIT	Co-op
5	Co-op	RIT	RIT	—

Year	Fall	Winter	Spring	Summer
1	RIT	RIT	RIT	—
2	RIT	RIT	RIT	Vacation
3	RIT	Co-op	Co-op	RIT
4	RIT	Co-op	Co-op	RIT
5	Co-op/RIT	RIT	RIT	—

**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.)

**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 at (585) 475-2165. A typical fourth- and fifth-year program sequence follows.

**Electrical engineering, BS/MS option, typical course sequence\*\***

	Qtr. Cr. Hrs.
<i>First Year- Third Year†</i>	133
<b>Fourth Year</b>	
Engineering Statistics 1016-314	4
Computer Architecture 0301-347	4
Liberal Arts*	4
Communication Systems 0301-534	5
Matrix Methods in Electrical Engineering 0301-703	4
Control Systems Design 0301-514	5
Digital Electronics 0301-545	4
Random Signals and Noise 0301-702	4
Professional Electives	12
Thesis 0301-890	2
Cooperative Education (1 quarter)	Co-op
<b>Fifth Year</b>	
Graduate Courses	20
Mechatronics 0301-531	4
Professional Electives	4
Senior Design I, II 0301-697, 698	8
Liberal Arts*	8
Thesis 031-890	7
Cooperative Education (1 quarter)	Co-op
<b>Total Quarter Credit Hours</b>	<b>232</b>

\* Please see Liberal Arts General Education Requirements for more information.  
 \*\*For suggested quarterly schedule, consult with your academic adviser.  
 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.  
 †The first three years of the program are identical to the first three years of the BS program in electrical engineering.

**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 ana-

log 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.

**BS/MS material science**

Many areas of endeavor within electrical engineering require an understanding of materials-related issues. This BS/MS option offers a grounding in both areas. Students earn a BS degree in electrical engineering and an MS degree in materials science and engineering. Graduates will have a significantly stronger background in the materials engineering associated with emerging devices, circuits, and systems in addition to the design and applications knowledge gained from the electrical engineering curriculum. Furthermore, students will be better prepared for graduate research and the possibility of entering RIT’s doctorate program in microsystems engineering.

**BS/MS microelectronic engineering and material 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\*\***

	Qtr. Cr. Hrs.
<i>First Year</i>	Same as BS (Microelectronic Engineering) 52
<i>Second Year</i>	Same as BS (Microelectronic Engineering) 49
<i>Third Year</i>	Same as BS (Microelectronic Engineering) 32

<b>Fourth Year</b>	Optics for Microelectronics 0305-525	4
	Microlithography Systems and Lab 0305-563, 573	4
	Silicon Processes 0305-632	4
	Thin Film Processes 0305-703	4
	VLSI Design 0305-520	4
	Free Elective	4
	Liberal Arts*	8
	Cooperative Education (1 quarter)	Co-op
	Introduction to Materials Science 1028-701	4
	Introduction to Theoretical Methods 1028-704	4
	Introduction to Experimental Techniques 1028-705	4
	MSE Graduate Elective	4
<b>Fifth Year</b>	CMOS Processing Lab 0305-650	4
	Microlithography Materials and Processes with Lab 0305-666, 721	3
	Senior Design Project I, II 0305-381, 691	6
	Free Elective	4
	Liberal Arts*	8
	Solid State Science 1028-703	4
	Introduction to Polymer Science 1028-702	4
	MSE Graduate Elective	4
	MSE Research 1028-879	8
	MSE Seminar/Defense 1028-890	1
<b>Total Quarter Credit Hours</b>		<b>225</b>

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

\*\*For a suggested quarterly schedule, please consult with an academic adviser.

## Industrial and Systems Engineering

**Jacqueline R. Mozrall, Head**

[www.rit.edu/kgcoe/ise/](http://www.rit.edu/kgcoe/ise/)

### 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 solutions**—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.

**Life-long 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.

### Program

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 fre-

quently 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 graduates 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 technological knowledge and communication skills. Industrial engineering 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 and systems engineering student can gain breadth of knowledge in many different areas of industrial engineering, including, but not limited to, information systems, manufacturing, quality, distribution/logistics, and sustainable design and development. Students may choose free and professional electives for this purpose. The industrial and systems engineering faculty are committed to high-quality engineering education as well as the program's educational objectives.

The industrial engineering curriculum covers the principal concepts of project management, human performance, mathematical modeling, applied statistics and quality, information management systems, and contemporary manufacturing 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, distributing products worldwide, or manufacturing superior automobiles.

"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.

The BS program in industrial engineering is accredited by ABET (Accreditation Board of Engineering and Technology).



## Accelerated dual degree options

The ISE 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 ISE department at (585) 475-2598, or visit their website.

## Facilities

The industrial and systems engineering department of the Kate Gleason College is located in the James E. Gleason Building. The department houses several state-of-the-art laboratories, including the Brinkman Machine Tools and Manufacturing 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, FoxPro), data acquisition (e.g., Lab View), statistical analysis (e.g., Minitab, SAS), facilities layout (e.g., AutoCad, Factory Flow, Factory Plan), manufacturing (e.g., MasterCam Cambridge Engineering Selector Software), optimization (e.g., ILOG OPL-CPLEX, LINDO), systems simulation software (e.g., Solver, AutoMod, AutoSched ProModel, Arena), and lifecycle assessment and costing tools (e.g., SimaPro).

## 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 IBM, Toyota, Kodak, Xerox, Intel, General Mills, Walt Disney World, Ortho-McNeil Pharmaceutical, and Lockheed Martin, 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 design process of new 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
- Manage operations at a hospital
- Evaluate waiting time and space utilization in an amusement park

### Industrial engineering, BS degree, typical course sequence \*\*

		Qtr. Cr. Hrs.
<i>First Year</i>	Fundamentals of Industrial Engineering 0303-201	4
	Computer Tools for Increased Productivity 0303-204	2
	College Chemistry 1011-208	4
	Calculus I, II, III 1016-281, 282, 283	12
	University Physics I, II 1017-311, 312	8
	Materials Processing 0303-343	3
	Liberal Arts*	16
	First-Year Enrichment 0303-051, 052	2
	Wellness Education†	
	<i>Second Year</i>	Mechanics I 0304-331
Mechanics II 0304-332		3
Multivariable Calculus 1016-305		4
Computing for Engineers 0303-302		4
Differential Equations 1016-306		4
Matrix Algebra 1016-331		4
University Physics III 1017-313		4
Human Biology II 1004-212		3
Materials Science 0304-344		4
Free Elective		4
Liberal Arts*		12
Wellness Education†		
<i>Third Year</i>	Liberal Arts*	4
	Engineering Economy 0303-520	4
	Introduction to Operations Research 0303-401	4
	Probability and Statistics I, II 0307-361, 362	8
	Ergonomics 0303-415	4
	Engineering Management 0303-481	4
	Systems and Facilities Planning 0303-422	4
	Cooperative Education (2 quarters)	Co-op
<i>Fourth Year</i>	Applied Statistical Quality Control 0303-510	4
	Applied Linear Regression Analysis 0303-511	4
	Production Control 0303-402	4
	Systems Simulation 0303-503	4
	Human Factors 0303-516	4
	Design and Analysis of Production Systems 0303-526	4
	Professional Elective	4
	Liberal Arts*	4
	Cooperative Education (2 quarters)	Co-op

<i>Fifth Year</i>	Advanced Systems Integration 0303-630	4
	Multidisciplinary Senior Design I, II 0303-560, 561	8
	Professional Electives	12
	Free Elective	8
	Cooperative Education (1 quarter)	Co-op
<b>Total Quarter Credit Hours</b>		<b>196</b>

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

† Please see Wellness Education Requirement for more information.

\*\* For suggested quarterly schedule, consult Web page ([www.rit.edu/kgcoe/ise](http://www.rit.edu/kgcoe/ise)).

### Professional electives (partial list)

- 0303-691 Fundamentals of Sustainable Design
- 0303-704 Logistics Management
- 0303-734 Safety Engineering
- 0303-765 Databases for Information Systems
- 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](http://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.)

## Mechanical Engineering

### Edward C. Hensel, Head

[www.rit.edu/kgcoe/mechanical/](http://www.rit.edu/kgcoe/mechanical/)

### Educational objectives

The objectives of the bachelor of science degree program in mechanical engineering are to prepare graduates to:

- apply fundamental knowledge, skills, and tools of mechanical engineering;
- practice mechanical engineering in support of the design of engineered systems;
- accept the professional and ethical responsibilities to function as an engineer;
- contribute and communicate effectively within and across teams;
- continue their development as lifelong learners;
- possess a broad education and knowledge of contemporary issues;
- work as engineers in a variety of industries; and
- prepare to enter graduate programs and succeed in obtaining advanced degrees, if they choose.

### Program

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, an aero-structures laboratory, 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 Auto-sports Competition team, the SAE Aerodesign Club, the Micro-Air Vehicle 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.

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, and engineering mechanics, while the third and fourth years emphasize engineering science in solid body mechanics, thermal fluid sciences, and electrical engineering.

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.

The BS program in mechanical engineering is accredited by ABET (Accreditation Board of Engineering and Technology).

### Program options

The program offers a number of course options students may select 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, the options 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.

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.

### **The aerospace engineering option**

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 an introductory free elective, Introduction to Aerospace Engineering (0304-560) in place of Transport Phenomena (0304-550). Students then complete a sequence of four technical elective courses in the areas of 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), Orbital Mechanics (0304-683), and Advanced Aerodynamics (0304-875). 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).

### **The automotive engineering option**

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 an introductory course acquainting the student with the general field of automotive design and manufacturing. This is followed by advanced technical electives such as 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), High Performance Vehicle Engineering (0303-771), 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).

### **The bioengineering option**

The bioengineering option consists of one or more biological science electives, a free elective on Contemporary Issues in Bioengineering (0304-461), and three technical electives chosen from a wide variety of offerings, such as Aerosol in the Respiratory Tract (0304-756), Biomechanics (0304-732), 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.

### **The energy and environment option**

This option consists of a series 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. Students in this option will complete the free elective Contemporary Issues in Energy and the Environment (0304-460), then select three technical electives from a variety of offerings 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. This concentration is intended to increase the opportunities for students who want to work in the fields of building energy systems, alternative and renewable energy, and direct energy conversion both in co-op and upon graduation.

### **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 cliché 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.

## Mechanical engineering, BS degree, typical course sequence\*\*

		Qtr. Cr. Hrs.	
<b>First Year</b>	First-Year Enrichment 0304-051, 052	2	
	<i>Students will be enrolled in one of the calculus sequences below:</i>		
	Calculus I, II, III 1016-281, 282, 283	12	
	Calculus A, B, C 1016-271, 272, 273	12	
	Chemistry I 1011-208	4	
	Materials Processing 0304-343	3	
	Liberal Arts*	4	
	University Physics I, II 1017-311, 312	4	
	Engineering Design Graphics 0304-214	2	
	Measurements, Instrumentation, Controls Lab 0304-280	2	
	Liberal Arts*	4	
	Problem Solving with Computers 0304-342	3	
	Liberal Arts*	4	
	Wellness Education†	0	
	<b>Second Year</b>	Science Elective or Calculus D 1016-274	4
Multivariable Calculus 1016-305		4	
Differential Equations 1016-306		4	
Matrices and Boundary Value Problems 1016-318		4	
University Physics III 1017-313		4	
Thermodynamics 0304-413		4	
Fluid Mechanics 0304-415		4	
Statics 0304-336		4	
Mechanics of Materials 0304-347		4	
Mechanics of Materials Lab 0304-348		1	
Dynamics 0304-359		5	
Liberal Arts*		4	
Wellness Education†		0	
<b>Third Year</b>		Engineering Statistics 1016-314	4
		Materials Science 0304-344	4
	Cornerstone Design Projects Lab 0304-261	2	
	Design of Machine Elements 0304-437	4	
	Numerical Methods 0304-440	4	
	Heat Transfer 0304-514	4	
	Thermal Fluids Lab I 0304-416	1	
	Circuits I 0301-381	4	
	Liberal Arts*	4	
	Cooperative Education (2 quarters)	Co-op	
	<b>Fourth Year</b>	Advanced Computational Techniques 0304-518	4
Liberal Arts*		8	
Systems Dynamics 0304-543		5	
Transport Phenomena 0304-550		4	
Thermal Fluids Lab II 0304-551		1	
Cooperative Education (3 quarters)	Co-op		
<b>Fifth Year</b>	Technical Electives	16	
	Free Electives	12	
	Science Elective	4	
	Liberal Arts*	8	
	Heat Transfer 0304-514	4	
	Senior Design I, II 0304-630, 631	8	
<b>Total Quarter Credit Hours</b>		<b>195</b>	

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

† Please see Wellness Education Requirement for more information.

\*\* For suggested quarterly schedule, consult with your academic adviser.

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

### Aerospace Technical Electives

0304-575 Aerodynamics\*

0304-644 Introduction to Composite Materials

0304-643 Control Systems

0304-671 Aerospace Structures

0304-678 Propulsion

0304-682 Flight Dynamics

0304-683 Orbital Mechanics

0304-743 Intermediate Control Systems

0304-754 Fundamentals of Fatigue and Fracture Mechanics

*\*This course replaces 0304-550 Transport Phenomena in the core.*

### Automotive Technical Electives

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

0303-771 High Performance Vehicle Engineering

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

0304-660 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

## 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

0304-610 Topics in Mechanical Engineering Design

0304-615 Robotics



# College of Imaging Arts and Sciences

Frank Cost, Interim Dean

<http://cias.rit.edu>

The College of Imaging Arts and Sciences includes the schools of Art, Design, American Crafts, Film and Animation, Photographic Arts and Sciences, and Print Media. Students from throughout the United States and foreign countries are enrolled in these six schools. 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.

## The School of Art

The School of Art enrolls approximately 250 students in programs leading to the following degrees:

**Associate in applied science (AAS)** in illustration and fine arts studio (painting, print making, sculpture, new forms)

**Bachelor of fine arts (BFA)** in illustration, medical illustration, and fine arts studio (painting, printmaking, sculpture, new forms)

**Master of science for teachers (MST)** in visual arts and fine arts studio (painting, printmaking, sculpture, new forms)

**Master of fine arts (MFA)** in medical illustration and fine arts studio (painting, printmaking, sculpture, new forms)

## The School of Design

The School of Design enrolls more than 650 students in programs leading to the following degrees:

**Associate in applied science (AAS)** in graphic design, interior design, and industrial design

**Bachelor of fine arts (BFA)** in graphic design, interior design, industrial design, new media design and imaging, and 3D digital graphics

**Master of fine arts (MFA)** in computer graphics design, graphic design, and industrial design

## The School for American Crafts

The School for American Crafts enrolls more than 120 students in programs leading to the following degrees:

**Associate in occupational studies (AOS)** in wood

**Bachelor of fine arts (BFA)** in ceramics, glass, metals, and wood

**Master of fine arts (MFA)** in ceramics, glass, metals, and wood



## The School of Film and Animation

The School of Film and Animation enrolls more than 250 students in programs leading to the following degrees:

**Bachelor of science (BS)** in digital cinema

**Bachelor of fine arts (BFA)** in film/video production and animation

**Master of fine arts (MFA)** in imaging arts, with concentrations in animation and film/video production

## The School of Photographic Arts and Sciences

More than 700 students are enrolled in the School of Photographic Arts and Sciences, which offers programs leading to the following degrees:

**Bachelor of science (BS)** in biomedical photographic communications and imaging and photographic technology

**Bachelor of fine arts (BFA)** in visual media and professional photographic illustration, with options in advertising photography, photojournalism, and fine art photography

**Master of fine arts (MFA)** in imaging arts, with concentrations in photography, related media, and museum studies

## The School of Print Media

The School of Print Media has approximately 225 students enrolled in the following degree programs:

**Bachelor of science (BS)** in new media publishing

**Master of science (MS)** in print media

## Undeclared Option

If students have a passion for the visual arts, but are undecided about which program of study to pursue, students may consider either the undeclared art and design or the undeclared crafts option. 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 requirements

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

Admission to the schools of Art, American Crafts, and Design requires a combination of academic and creative visual skills that is evaluated via a portfolio. Faculty will review each student's portfolio to evaluate creative visual skills as well as the potential for likely 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 the transfer of credits to satisfy program requirements. A portfolio is optional for applicants to the School of Film and Animation.

Visits to campus are encouraged. Students may contact the Office of Undergraduate Admissions for more information about any of the programs featured in the College of Imaging Arts and Sciences to arrange an admission interview or to visit the campus and the college's facilities.

#### **Guidelines for portfolio submission:**

1. Portfolios for the schools of Art, American Crafts, 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.

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; however, they may be submitted. Portfolios are likely 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 film 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://futurestudent.rit.edu/ugrad/apply.cfm>.

#### **Facilities**

The College of Imaging Arts and Sciences provides students with specialized laboratories, studios, advanced computer facilities and a wide range of equipment, placing our college on the cutting edge of technological developments in the career fields of photography, publishing media and printing, film and animation, art, design, and crafts.

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. Receptions and a speaker series provide students with the invaluable opportunity to meet and learn from guest artists and professionals. A comprehensive art library and a variety of educational resources are available in RIT's Wallace Library.

Major college resources available to students include:

- Thirty 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
- 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, maintaining a selected collection of student and alumni artwork for on-site consignment and sales.

### 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 BS programs in the School of Photographic Arts and Sciences. Although co-op is not required in the BFA programs in the schools of Art, Design, American Crafts, 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.

While students are responsible for identifying co-op positions, the Office of Cooperative Education and Career Services offers services and resources such as one-on-one job search advice and a Web-based employment database.

### 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 Art, Design, American Crafts, Photographic Arts and Sciences, and Film and Animation. The School of Design's interior design program is accredited by the Foundation for Interior Design Education Research.

### Additional information

Policy regarding student work: RIT assumes the right to make a record of student work for use in the classroom or for promotion. This may entail photography or a variety of electronic imaging/recording.

Attendance regulations: Some of the programs in the college utilize experiential learning as an essential part of the educational program. Therefore, it is imperative that the student regularly attend all classes unless specifically excused for special projects or activities by the instructor. Failure to attend classes or complete assignments will be taken into consideration in grading.

## School of Art

### Don Arday, Administrative Chair

<http://cias.rit.edu/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.

### Credit requirements

The credit requirements for students admitted in the School of Art's medical illustration, illustration, and fine arts studio programs are as follows:

	Qtr. Cr. Hrs.
Required Major	93-94
Professional Electives	15
Open Electives	21
Liberal Arts	36
General Education	12
Art History	9
Art History/General Education	9
<b>Total Quarter Credit Hours</b>	<b>183-184</b>

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

### Art History (select three)

Students are required to select three art history electives to broaden their understanding of art's historical development. 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

\*Electives prerequisite: Completion of foundation program or permission of instructor.  
 Additional selections offered as special topics.  
 †Required for interior design majors and School for American Crafts wood majors.

## Programs

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, two- and three-dimensional design, and creative sources.

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.

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.

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.

## Illustration, fine arts studio, and medical illustration, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
<b>Foundation Studies:</b>	
Foundation Vector Imaging 2013-215	1
Foundation Raster Imaging 2013-216	1
Freshman Elective	4
Creative Sources 2013-205, 206, 207	3
Drawing 2013-211, 212, 213	9
2D Design 2013-231, 232, 233	9
3D Design 2013-241, 242, 243	9
Liberal Arts*	12
First-Year Enrichment 1720-050, 052	2
Wellness Education†	0
<b>Second Year</b>	
Survey of Western Art and Architecture 2039-225, 226, 227	9
Liberal Arts*	12
Wellness Education†	0
<b>Illustration majors:</b>	
Illustration I 2019-301	3
Head, Hands, Facial Expressions 2019-306	3
Digital Illustration I 2019-311	3
Illustration Techniques I 2019-345	3
Dimensional Illustration I 2019-361	3
Studio electives	9
<b>Fine Arts Studio majors:</b>	
Introduction to Fine Arts Drawing 2021-xxx	3
Introduction to Painting 2021-305	3
Intermediate Painting 2021-xxx	3
Figure in Motion 2021-xxx	3
Introduction to Non-Toxic Printmaking 2021-315	3
Intermediate Non-Toxic Printmaking 2021-xxx	3
Introduction to Sculpture 2021-xxx	3
Intermediate Sculpture 2021-xxx	3
Studio elective	3
<b>Medical Illustration majors:</b>	
Digital Illustration I 2019-311	3
General Biology 1001-201	4
Human Biology II, III 1004-212, 259	8
Choose three of the following courses:	9
Illustration I 2019-301	3
Head, Hands, Facial Expressions 2019-306	3
Zoological and Botanical Illustration 2019-323	3
Illustration Techniques I 2019-345	3
Figure in Motion 2021-xxx	3
<b>Third Year</b>	
Art History Elective	9
Studio electives	6
Open elective	3-4
Liberal Arts*	12
<b>Illustration majors:</b>	
Junior-level courses from major concentration	12
Program electives	6
<b>Fine Arts Studio majors:</b>	
Junior-level courses from Fine Arts Studio I	9
Sculpture Ideation and Series 2021-xxx	3
Figure Studies course	3
<b>Medical Illustration majors:</b>	
Human Gross Anatomy 2020-431, 432	8
Anatomic Figure Drawing 2019-xxx	3
Anatomic Illustration Wet Media 2020-407	3
Anatomic Drawing and Illustration 2020-406	3
Computer Application Anatomic Illustration 2020-408	3
Anatomic Drawing II 2020-409	3
Anatomic Illustration Mixed Media 2020-410	3



<b>Fourth Year</b>	Studio elective	3
	Open electives	18-24
<b>Illustration majors:</b>		
	Illustration Marketing and Business 2019-513	3
	Portfolio Preparation 2019-563	3
	Senior-level courses from major concentration	15
<b>Fine Arts Studio majors:</b>		
	Business Practices for the Fine Arts 2021-572	3
	Senior-level courses from Fine Arts Studio II	15
<b>Medical Illustration majors:</b>		
	Advanced Medical Illustration 2020-501	3
	Surgical Drawing and Illustration I 2020-504	3
	Surgical Drawing and Illustration II 2020-505	3
	Computer Animation in Medical Illustration 2020-506	3
	Marketing and Business Practices 2020-507	3
	Medical Illustration Portfolio 2020-508	3
<b>Total Quarter Credit Hours</b>		<b>182-186</b>

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

† Please see Wellness Education Requirement for more information.

## School of Design

### Patti Lachance, Administrative Chair

<http://cias.rit.edu/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.

### Programs

The School of Design offers BFA degree programs in graphic design, interior design, industrial design, new media design and imaging, and 3D digital graphics. All of these programs integrate 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.

Our faculty members bring a variety of experiences and expertise to the curriculum. Students have the opportunity to supplement their academic experience with participation in internships, guest speaker presentations, seminars, field trips, and student chapters of professional organizations.

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.

### Admission requirements

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

Transfer credits from accredited institutions are evaluated on a course-by-course basis. These credits are awarded on the basis of a required portfolio review and courses related to the major with a grade of C or better (see portfolio guidelines). A summer transfer program or series of summer courses and workshops may be required.

### Electives

Students can take a variety of electives at the university. Studio/professional electives are offered within the college. Open electives are university wide, including within this college.

### Credit requirements

The credit requirements for students admitted to School of Design programs are as follows:

Graphic Design	Qtr. Cr. Hrs.
Major (including freshman core)	92
Professional Electives	18
Open Electives	9
Liberal Arts	36
General Education Electives	9
Design and Art History	18
Wellness Education†	0
<b>Total Quarter Credit Hours</b>	<b>182</b>

Industrial Design	Qtr. Cr. Hrs.
Major (including freshman core)	90
Professional Electives	18
Open Electives	9
Liberal Arts*	36
General Education Electives	9
Design and Art History	18
Wellness Education†	0
<b>Total Quarter Credit Hours</b>	<b>180</b>

Interior Design	Qtr. Cr. Hrs.
Major (including freshman core)	93
Professional Electives	18
Open Electives	9
Liberal Arts*	36
General Education Electives	9
Design and Art History	18
Wellness Education†	0
<b>Total Quarter Credit Hours</b>	<b>183</b>

New Media Design and Imaging	Qtr. Cr. Hrs.
Major (including freshman core)	107
Professional Electives	6
Open Electives	6
General Education Electives	9
Liberal Arts*	36
Design and Art History	18
Wellness Education†	0
<b>Total Quarter Credit Hours</b>	<b>182</b>

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

† Please see Wellness Education Requirement for more information.

## Graphic Design

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.

### Graphic design, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year (Foundation Studies)</b>	
<b>Foundation Studies:</b>	
Freshman Elective	2
Vector Imaging 2013-216	2
Raster Imaging 2013-211	2
Creative Sources 2013-205	1
Drawing 2013-211, 212, 213	9
2D Design 2013-231, 232	6
3D Design 2013-241, 242, 243	9
Elements of Graphic Design 2010-301	3
Design Survey 2015-222	2
Liberal Arts*	12
First-Year Enrichment 1720-050, 052	2
Wellness Education†	0
<b>Second Year</b>	
Survey of Western Art and Architecture 2039-225, 226, 227	9
Typography I 2010-302	3
Introduction to Time-Based Design 2010-313	3
Typography II 2010-401	3
Imagery in Design 2010-402	3
Studio Electives	9-12
Liberal Arts*	12
Wellness Education†	0
<b>Third Year</b>	
History of Graphic Design 2010-471	3
Art History Electives**	6
Symbol and Icon Design 2010-403	3
Design for Publications 2010-404	3
Information Design 2010-405	3
Environmental Design 2010-406	3
Introduction to Interactive Media Design 2010-512	3
Career Skills and Professional Practice 2010-501	2
Introduction to Web Design 2010-561	3
Studio Electives	9
Liberal Arts*	12
<b>Fourth Year</b>	
Open Electives	18-24
<i>Majors must take an additional eight senior-level courses from the list below:</i>	
Corporate Design 2010-502	3
Design Systems 2010-504	3
Advertising Design 2010-505	3
Concept and Symbolism 2010-506	3
Design for Marketing 2010-507	3
Advanced Information Design 2010-511	3
Introduction to Interactive Media Design 2010-512	3
Senior Project 2010-513	3
Editorial Design 2010-514	3
Senior Internship 2010-523	3
Portfolio Development and Presentation 2010-524	3
Advanced Web Design 2010-562	3
<b>Total Quarter Credit Hours</b>	<b>184</b>

\*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.

## 3D Digital Graphics

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.

### 3D digital graphics, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Introduction to 3DDG Modeling 2014-221	4
Introduction to 3DDG Materials 2014-222	4
Introduction to 3DDG Motion 2014-223	4
Technical Drawing 2014-231	2
Drawing Motion 2014-233	3
Survey of Western Art and Architecture 2039-225, 226, 227	9
Imaging for New Media 2083-206	4
Liberal Arts*	12
Open Electives	6-8
First-Year Enrichment 1720-050, 052	2
Wellness Education†	0
<b>Second Year</b>	
Digital Video for MM 2014-363	4
Basic Design I 2012-201	2
Flowcharts and Storyboards 2014-343	2
Anatomical Drawing I 2020-409	3
Introduction to Programming 4002-208	4
Programming with Classes 4002-210	4
Major Electives**	12
Liberal Arts*	12
<b>Third Year</b>	
Project Planning 2014-411	2
Senior Thesis Assist 2014-432	4
Introduction to Production Pipeline 2014-463	4
Major Electives**	22
Liberal Arts*	12
Open Elective	3-4
<b>Fourth Year</b>	
Senior Thesis I, II 2014-511, 512	12
Portfolio Development 2014-513	2
Major Electives**	12
History of Computer Graphics 2014-xxx	3
Art History Electives†	6
Open Electives	9-12
<b>Total Quarter Credit Hours</b>	<b>186</b>

\*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.

## Interior Design

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.

## Interior design, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
<b>Foundation Studies:</b>	
Freshman Electives	4
Vector Imaging 2010-216 or Raster Imaging 2010-211	2
Creative Sources 2013-205	1
Drawing 2013-211, 212, 213	9
2D Design 2013-231, 232, 233	9
3D Design 2013-241, 242, 243	9
Design Survey 2015-222	2
Liberal Arts*	12
First-Year Enrichment 1720-050, 052	2
Wellness Education†	0
<b>Second Year</b>	
Survey of Western Art and Architecture 2039-225, 226, 227	9
<i>Majors must take each of the following courses to complete the sophomore year (prerequisite: completion of Foundation Studies):</i>	
Architectural Drawing 2015-305	3
Perspective Drawing 2015-306	3
Introduction to Interior Design 2015-307	3
Computer-Aided Design Applications 2015-308	3
Model Building and Human Dimension 2015-311	3
Studio Electives	9-12
Liberal Arts*	12
Wellness Education†	0
<b>Third Year</b>	
History of Architecture and Furniture 2039-306, 307, 308	9
<i>Majors must take each of these courses in sequence to complete junior year in interior design (pre-requisite: completion of sophomore year):#</i>	
Hospitality Design 2015-404	3
Application of Color and Light 2015-405	3
Retail Design 2015-406	3
Building Construction Systems 2015-407	3
Office Design and Planning 2015-408	3
Interior Specifications 2015-409	3
Studio Electives	9
Liberal Arts*	12
<b>Fourth Year</b>	
<i>Majors must take these courses to complete senior year in interior design (prerequisite: completion of junior year):#</i>	
Multipurpose/Multistory Design 2015-504	4
Building Codes and Regulations 2015-505	2
Environmental Control Applications 2015-506	3
Healthcare Design 2015-507	4
Interior Design Business Practices 2015-508	2
Career Planning 2015-509	2
Working Drawings 2015-510	4
Special Projects 2015-511	3
Open Elective	18-24
<b>Total Quarter Credit Hours</b>	<b>185</b>

\*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.

## Industrial Design

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.

## Industrial design, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
<b>Foundation Studies:</b>	
Freshman Electives	4
Vector Imaging 2010-216 or Raster Imaging 2010-211	2
Creative Sources 2013-205	1
Drawing 2013-211, 212, 213	9
2D Design 2013-231, 232, 233	9
3D Design 2013-241, 242, 243	9
Design Survey 2015-222	2
Liberal Arts*	12
First-Year Enrichment 1720-050, 052	2
Wellness Education†	0
<b>Second Year</b>	
Survey of Western Art and Architecture 2039-225, 226, 227	9
Technical Drawing 2035-306	2
Model Making 2035-311	2
Graphic Visualization I, II, III 2035-321, 322, 323	6
Form I, II 2035-331, 332	4
Sophomore Design Studio 2035-348	4
Studio Electives	9-12
Liberal Arts*	12
Wellness Education†	0
<b>Third Year</b>	
History of Industrial Design 2035-442	3
Art History	3
Art History Electives**	3
Materials and Process Applications 2035-405	3
Consumer Product Design I 2035-406	3
Human Factors Applications 2035-407	3
Equipment Design 2035-408	3
Consumer Product Design II 2035-410	3
CAD Applications 2035-418	3
Studio Electives	9
Liberal Arts*	12
<b>Fourth Year</b>	
Professional Practice 2035-510	3
Career Planning 2035-513	3
<i>Choose one of the following:</i>	
Design Collaborative 2035-506	3
Internship 2035-498	3
<i>Choose two of the following:</i>	
Furniture Design 2035-508	3
Advanced Product Design 2035-512	3
Toy Design 2035-522	3
Packaging Design 2035-527	3
Open Electives	18-24
<b>Total Quarter Credit Hours</b>	<b>185</b>

\*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.

## New Media Design and Imaging

This program was created in response to the growing demand for college graduates with strong digital imaging skills, highly refined design sensitivities, 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 BS program in new media publishing and 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.

#### New media design and imaging, BFA degree, typical course sequence

	Qtr.	Cr.	Hrs.	
<b>First Year</b>	Drawing 2013-211, 212		6	
	2D Design 2013-231, 232		6	
	Elements of Graphic Design for New Media 2009-213		3	
	Typography for New Media 2009-311		3	
	Introduction to Computer Imaging 2009-313		3	
	Time-Based Imaging 2009-411		4	
	Digital Video for Multimedia 2065-217		4	
	Principles of Imaging for New Media 2009-xxx		4	
	Introduction to Web 2009-xxx		4	
	Liberal Arts*		12	
	First-Year Enrichment 1720-050, 052		2	
Wellness Education†		0		
<b>Second Year</b>	Survey of Western Art and Architecture 2039-225, 226, 227		9	
	3D Form and Space 2009-212		3	
	Information Design for New Media 2009-312		3	
	Introduction to Digital Animation 2009-328		4	
	Advanced Design Networking 2009-401		3	
	Introduction to Programming for New Media 4080-230		4	
	Programming II for New Media 4080-231		4	
	Introduction to Web Development 4080-309		4	
	Studio Elective		3	
	Liberal Arts*		12	
	Wellness Education†		0	
	<b>Third Year</b>	Art History Electives**		9
		Design of Graphical User Interface 2009-323		4
Emerging Multimedia Design and Imaging Tools 2009-402			3	
Dynamic Information Design 2009-403			3	
Dynamic Typography 2009-412			3	
Advanced 3D Techniques 2009-413			3	
New Media Elective			3	
Open Elective			3	
Liberal Arts*			12	
<b>Fourth Year</b>		Dynamic Persuasion 2009-501		3
		Choose two of the following:		
	Virtual Entertainment 2009-502		3	
	QTVR and Multimedia Design 2009-511		3	
	Experimental New Media 2009-xxx		1	
	Experimental New Media II 2009-522		3	
	Studio Elective		3	
	Career Skills in New Media 2009-516		3	
	New Media Team Project I, II 2009-542, 543		8	
	Studio Elective		3	
	Open Electives		12-16	
<b>Total Quarter Credit Hours</b>		<b>182</b>		

\*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.

## School for American Crafts

### Don Arday, Administrative Chair

<http://cias.rit.edu/crafts>

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.

### Programs of study

**BFA programs:** The School for American Crafts offers a full-time program of study with the opportunity to major in one of four craft fields: ceramics, glass, metals, or wood. After the satisfactory completion of two years of study, the associate in applied science degree is awarded. After successful completion of the four-year program, the bachelor of fine arts degree is awarded. The credit requirements for the bachelor of fine arts are as follows:

	Qtr.	Cr.	Hrs.
Required Craft Major Studio			90
Required Electives			9
Business Practices			9
Liberal Arts*			36
General Education			9
Art History			18
Creative Sources			3
Freshman Elective			6
Wellness Education†			0
<b>Total Quarter Credit Hours</b>			<b>182-185</b>

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

†Please see Wellness Education Requirement for more information

**AOS program:** A two-year associate degree in occupational studies also is offered in woodworking and furniture design. The credit requirements are as follows:

	Qtr.	Cr.	Hrs.
Required Wood Major			36
Creative Sources			3
Drawing			9
2D Design			9
3D Design			9
Advanced Drawing			9
Art History Elective**			9
Professional Business Practices			9
Wellness Education†			0
<b>Total Quarter Credit Hours</b>			<b>93</b>

\*\*Please refer to the list of art history electives.

† Please see Wellness Education Requirement for more information

The School for American Crafts offers a crafts residence program for participants accepted in the ceramics, glass, metals, and wood studio 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.

### Ceramics, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Elective	6
Creative Sources 2013-205, 206, 207	3
Drawing 2013-211, 212, 213	9
2D Design 2013-231, 232, 233	9
3D Design 2013-241, 242, 243	9
Liberal Arts*	12
First-Year Enrichment 1720-050, 052	2
Wellness Education†	0
<b>Second Year‡</b>	
Survey of Western Art and Architecture 2039-225, 226, 227	9
Materials and Processes Ceramics, Sophomore 2040-301, 302, 303	18
Concept Drawing 2045-311	3
Craft Technical Drawing 2045-312	3
Design Processes 2045-xxx	3
Wellness Education†	0
<b>Third Year</b>	
Materials and Processes Ceramics, Junior 2040-401, 402, 403	18
Art History**	9
Open Electives	9
Liberal Arts*	12
<b>Fourth Year</b>	
Materials and Processes Ceramics, Senior 2040-501, 502, 503	18
Planning a Career in the Crafts 2045-511	3
Crafts Promotional Package 2045-512	3
Operating a Business in the Crafts 2045-513	3
Open Electives	9-12
<b>Total Quarter Credit Hours</b>	<b>182-188</b>

\*Please see Liberal Arts General Education Requirements for more information.  
 ‡Upon completion of second year, the associate in applied science degree is awarded.  
 †Please see Wellness Education Requirement for more information.  
 \*\*Please refer to the list of art history electives.

### Glass, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Elective	6
Creative Sources 2013-205, 206, 207	3
Drawing 2013-211, 212, 213	9
2D Design 2013-231, 232, 233	9
3D Design 2013-241, 242, 243	9
Liberal Arts*	12
First-Year Enrichment 1720-050, 052	2
Wellness Education†	0
<b>Second Year‡</b>	
Survey of Western Art and Architecture 2039-225, 226, 227	9
Materials and Processes Glass, Sophomore 2041-301, 302, 303	18
Concept Drawing 2045-311	3
Craft Technical Drawing 2045-312	3
Design Processes 2045-xxx	3
Wellness Education†	0
Liberal Arts*	12
<b>Third Year</b>	
Materials and Processes Glass, Junior 2041-401, 402, 403	18
Art History Electives**	9
Open Electives	9-12
Liberal Arts*	12
<b>Fourth Year</b>	
Materials and Processes Glass, Senior 2041-501, 502, 503	18
Planning a Career in the Crafts 2045-511	3
Crafts Promotional Package 2045-512	3
Operating a Business in the Crafts 2045-513	3
Open Electives	9-12
<b>Total Quarter Credit Hours</b>	<b>182-188</b>

\*Please see Liberal Arts General Education Requirements for more information.  
 ‡Upon completion of second year, the associate in applied science degree is awarded.  
 †Please see Wellness Education Requirement for more information.  
 \*\*Please refer to the list of art history electives.

### Metals, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Elective	6
Creative Sources 2013-205, 206, 207	3
Drawing 2013-211, 212, 213	9
2D Design 2013-231, 232, 233	9
3D Design 2013-241, 242, 243	9
Liberal Arts*	12
First-Year Enrichment 1720-050, 052	2
Wellness Education†	0
<b>Second Year‡</b>	
Survey of Western Art and Architecture 2039-225, 226, 227	9
Materials and Processes Metals, Sophomore 2042-301, 302, 303	18
Concept Drawing 2045-311	3
Craft Technical Drawing 2045-312	3
Design Processes 2045-xxx	3
Wellness Education†	0
Liberal Arts*	12
<b>Third Year</b>	
Materials and Processes Metals, Junior 2042-401, 402, 403	18
Art History Electives**	9
Open Electives	9
Liberal Arts*	12
<b>Fourth Year</b>	
Materials and Processes Metals, Senior 2042-501, 502, 503	18
Planning a Career in the Crafts 2045-511	3
Crafts Promotional Package 2045-512	3
Operating a Business in the Crafts 2045-513	3
Open Electives	9-12
<b>Total Quarter Credit Hours</b>	<b>182-188</b>

\*Please see Liberal Arts General Education Requirements for more information.  
 ‡Upon completion of second year, the associate in applied science degree is awarded.  
 †Please see Wellness Education Requirement for more information.  
 \*\*Please refer to the list of art history electives.

## Wood, BFA degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Freshman Elective	6
	Creative Sources 2013-205, 206, 207	3
	Drawing 2013-211, 212, 213	9
	2D Design 2013-231, 232, 233	9
	3D Design 2013-241, 242, 243	9
	Liberal Arts*	12
	First-Year Enrichment 1720-050, 052	2
	Wellness Education†	0
<b>Second Year‡</b>	Survey of Western Art and Architecture 2039-225, 226, 227	9
	Materials and Processes Wood, Sophomore 2044-301, 302, 303	18
	Concept Drawing 2045-311	3
	Craft Technical Drawing 2045-312	3
	Design Processes 2045-xxx	3
	Wellness Education†	0
	Liberal Arts*	12
	<b>Third Year</b>	Materials and Processes Wood, Junior 2044-401, 402, 403
Architecture, Interior Furniture Design History 2039-306, 307, 308		9
Open Electives		9
Liberal Arts*		12
<b>Fourth Year</b>		Materials and Processes Wood, Senior 2044-501, 502, 503
	Planning a Career in the Crafts 2045-511	3
	Crafts Promotional Package 2045-512	3
	Operating a Business in the Crafts 2045-513	3
	Open Electives	9-12

**Total Quarter Credit Hours** **182-188**

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

‡Upon completion of second year, the associate in applied science degree is awarded.

†Please see Wellness Education Requirement for more information.

\*\*Please refer to the list of art history electives.

## Wood, AOS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Creative Sources 2013-205, 206, 207	3
	Drawing 2013-211, 212, 213	9
	3D Design 2013-241, 242, 243	9
	Materials and Processes Wood, Sophomore 2044-301, 302, 303	18
	Concept Drawing 2045-311	3
	Craft Technical Drawing 2045-312	3
	Crafts Design Process 2045-xxx	3
	First-Year Enrichment 1720-050, 052	2
	Wellness Education†	0
	<b>Second Year</b>	2D Design 2013-231, 232, 233
Architecture, Interior Design, and Furniture Design History 2039-306, 307, 308		9
Materials and Processes Wood, Junior 2044-401, 402, 403		18
Planning a Career in the Crafts 2045-511		3
Crafts Promotional Package 2045-512		3
Operating a Business in the Crafts 2045-513		3
Wellness Education†		0
<b>Total Quarter Credit Hours</b>		<b>93</b>

†Please see Wellness Education Requirement for more information.

## Extended Studies for the School of Art and School of Design

### Fine and Applied Arts

#### Zerbe Sodervick, Administrative Chair

Fine and applied arts courses are designed to fulfill two overriding objectives—personal growth and cultural enrichment. A menu of individual courses, as well as a diploma program, is offered through the Office of Extended Studies.

Options begin with introductory courses that provide a basic exploration of the creative process and help students develop visual organization skills. After taking these courses, the student will be able to earn a fine and applied arts diploma. Some courses are offered only in alternate years.

Students should consult with an adviser to plan their course of study and clarify goals. The program chair also can be consulted for course substitution. Students must achieve a program GPA of at least 2.0 in order to be certified.

Extended studies for fall 2009 include new special topics courses in art and design, and skills for artists and entry-level designers, in addition to electronic tools and concepts. High school teachers will find these courses especially supportive for maintaining a current visual arts curriculum.

For more information on evening electives, call the chair at (585) 475-4977.

#### Core requirements

	Qtr. Cr. Hrs.
Basic Drawing and Media 2012-211, 212, 213	6
Basic Design 2012-201, 202, 203	6
Fine Arts: Visual Arts 0505-213	4

#### Diploma Program

	Qtr. Cr. Hrs.
Basic Figure Drawing 2012-215	2
Figure Drawing 2012-225	2
Portfolio Preparation 2012-229	2
Raster/Vector Graphics 2012-xxx	2
<i>Choose one of the following:</i>	2
Introduction to Painting 2012-286	2
Painting 2012-288	2
Watercolor 2012-293	2
<i>Choose one of the following:</i>	2
Introduction to Non-toxic Printmaking 2012-296	2
Printmaking Workshop 2012-396	2
Relief Printing 2012-xxx	2
Introduction to Screen Printing 2012-xxx	2
<i>Choose one of the following:</i>	2
Introduction to Sculpture	2
Introduction to Figure Sculpture 2012-xxx	2
Found Object Sculpture 2012-xxx	2
Mixed Media Rendering Techniques I	2
Mixed Media Rendering Techniques II 2012-267	2
Electives (with adviser's approval)	18
<b>Diploma Total</b>	<b>48</b>

\* Core requirements are a prerequisite for all diploma programs.

## School of Film and Animation

### **Malcolm Spaul, Administrative Chair**

<http://cias.rit.edu/~sofa>

The BFA degree program in film/video production 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.

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 are expressed in the department's work.

The BS degree program in digital cinema 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 film-making 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 at RIT 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.

### **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 DVDROM. 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 and be 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.

### **Graduate programs**

The School of Film and Animation offers the MFA degree in three areas of concentration: film/video production, two-dimensional animation, and three-dimensional animation. The MFA degree is described in the Graduate Bulletin, available from the Office of Graduate Enrollment Services or via the RIT website at [www.rit.edu/programs/grad/](http://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](mailto: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.

### **Freshman and transfer admission**

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

Transfer credit from accredited institutions is evaluated on a course-by-course basis. Transfer credits for film animation courses are awarded on the basis of a transcript in addition to course work with a grade of C or better. An optional portfolio will be reviewed by the department chair.

### **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.

## Film/video/animation, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Introduction to Film Production 2065-201	4
Digital Production I, II 2065-202, 203	8
Story and Structure 2065-206	2
Fundamentals of Computer Imaging 2065-216	3
Materials and Processes of Moving Image 2065-221	2
Film Language 2065-222	4
Single-Frame Motion 2065-263	2
Introduction to Animation 2065-331	4
Scriptwriting I 2065-342	3
Liberal Arts*	12
First-Year Enrichment 1720-050, 051	2
Wellness Education†	0
<b>Second Year</b>	
Post-production Processes 2065-344	4
Liberal Arts*	12
Wellness Education†	0
<b>Production Emphasis:</b>	
Production Processes 2065-316	5
Live-Action Pre-production 2065-324	3
Scriptwriting II 2065-343	3
Film/Video Production Workshop	4
Film Animation History and Aesthetics	12
Film/Animation Electives	9-12
<b>Animation Emphasis:</b>	
Animation Pre-production 2065-352	4
2D Computer Animation 2065-427	4
Introduction to 3D Modeling Animation 2065-457	4
Foundation Drawing 2013-211, 212	6
<i>Choose one of the following:</i>	4
Animation Production Workshop 2065-333	4
Experimental Animation Workshop 2065-447	4
<i>Choose one of the following:</i>	
Foundation Drawing 2013-213	3
2D Design 2013-231	3
3D Design 2013-241	3
Film/Animation History and Aesthetics	6-8
Film/Animation Elective	3-4
<b>Third Year</b>	
Senior Project Seminar 2065-413	1
Open Electives	8
Liberal Arts*	12
<b>Production Emphasis:</b>	
<i>Choose one of the following:</i>	
Writing the Short Film 2065-387	4
Dramatic Structure for Film/TV 2065-376	4
<i>Choose one of the following:</i>	
Production Workshop: Documentary/Experimental/Fiction	8
Writing the Short Film 2065-387	
Film/Animation History and Aesthetics	6-8
Film/Animation Elective	8
<b>Animation Emphasis:</b>	
<i>Choose one of the following:</i>	4
Introduction to 3D Computer Animation I 2065-361	
3D Computer Animation II 2065-478	
Advanced Animation Tools 2065-332	
Scriptwriting for Animation 2065-363	3
Advanced Animation Workshop I 2065-437	4
Advanced Animation Workshop II 2065-438	4
Film/Animation History and Aesthetics	3-4
Film/Animation Elective	6-8
<b>Fourth Year</b>	
Open Elective	4
Liberal Arts*	9-12
<b>Production Emphasis and Animation Emphasis:</b>	
Senior Project 1, 2, 3 2065-507, 508, 509	12
Senior Forum 2065-512	2
Career Preparation 2065-513	2
Film/Animation History and Aesthetics	3-4
Film/Animation Electives	9-12
<b>Total Quarter Credit Hours</b>	<b>184-195</b>

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

## Digital cinema, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Project-Based Calculus I, II, III 1016-281, 282, 283	12
University Physics I, II 1017-311, 312	8
Introduction to Film Production 2065-201	4
Digital Film Production 2065-202	4
Film Language 2065-222	4
Film/Video Materials and Technology, 2065-231	4
Liberal Arts*	8
Wellness Education†	0
First-Year Enrichment 1720-050, 051	2
<b>Second Year</b>	
University Physics III 1017-313	4
Programming for Imaging Science 1051-211	4
Linear Math for Imaging 1051-320	4
Vision and Psychophysics 1051-350	4
Radiometry 1051-370	4
Production Process 2065-316	5
Introduction to Animation I 2065-331	4
Post-production Processes 2065-344	4
Sound Recording 2065-452	3
Liberal Arts*	12
Wellness Education†	0
<b>Third Year</b>	
Geometric Optics 1051-303	4
Digital Image Process I 1051-361	4
Color Science 1051-402	4
Digital Imaging Processing II 1051-462	4
Introduction to 3D Computer Animation 2065-361	4
Image Capture and Production Technology I, II 2065-411, xxx	8
Special Effects and Digital Post 2065-xxx	4
Film/Animation History and Aesthetics	3
Free Elective	4
Liberal Arts*	8
<b>Fourth Year</b>	
Senior Project 1, 2, 3 2065-xxx, 508, 509	9
Film Projection and Digital Cinema 2065-xxx	4
Film/Animation Electives	9-12
Film/Animation History and Aesthetics	3
Free Electives	12
Liberal Arts*	8
<b>Total Quarter Credit Hours</b>	<b>185-188</b>

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

## School of Photographic Arts and Sciences

**Therese Mulligan, Administrative Chair, BFA programs**  
**Andrew Davidhazy, Administrative Chair, BS programs**

<http://cias.rit.edu/photo>

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 arts 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 images that are pictorial-, data-, and information-based images. All first-year BFA and BS students are required to have their own hand-held small- or medium-format digital camera and a professional light meter.

Students have the opportunity to supplement their course work with participation in internships, study abroad programs, field trips, presentations by guest speakers, departmental student organizations, and related activities.



Students are urged 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.

### **Degrees offered**

BFA degrees are offered in visual media and professional photographic illustration, with options in advertising photography, fine art photography, and photojournalism. BS degrees are offered in imaging and photographic technology and biomedical photographic communications.

### **Graduate programs**

The School of Photographic Arts and Sciences offers the MFA in imaging arts as well as graduate-level courses of study in photographic preservation and archival practice. The MFA degree is described in the Graduate Bulletin, available from the Office of Graduate Enrollment Services or via the RIT website at [www.rit.edu/programs/grad/](http://www.rit.edu/programs/grad/).

### **Summer session**

The School of Photographic Arts and Sciences offers summer session photographic courses. These range from first-year photography courses to those requiring a substantial photographic background.

### **Memberships**

The school maintains memberships in a number of professional organizations, including: Photo Marketing Association International, Photo Imaging Educators Association, College Art Association, Bio Communications Association, National Press Photographer Association Student Chapter, Ophthalmic Photographers Society, Society for Imaging Science and Technology, Society for Photographic Education, International Society for Optical Engineering, International Panoramic Photographers Association, and American Society of Media Photography.

### **Cooperative education**

Cooperative education is a program in which students gain valuable work experience in their field of study. Co-op experiences not only provide students with valuable insight into potential career opportunities but also open up newly discovered career paths. Co-ops feature full-time, paid work experience alternating with periods of study on campus. The College of Imaging Arts and Sciences does not award academic credit for co-op experiences.

The Office of Cooperative Education and Career Services assists students in arranging co-op placements as well as full-time employment upon graduation. The office hosts two annual career fairs, when employers seek to hire co-op and full-time positions, and also schedules on-campus employer visits. Co-op and career counselors conduct interview workshops, assist students in creating resumes, and help connect students with employers.

Co-op is required in the bachelor of science degree programs in the School of Photographic Arts and Sciences. Co-op placements in the bachelor of fine arts programs are optional.

### **Internships**

Internships are experiential learning opportunities typically arranged under the supervision of a faculty member or a department. Internships may be salaried or volunteer work experiences for which a student may earn academic credit. Internship experiences are evaluated by a member of the academic staff, and a student is assigned a merit grade based on his or her achievement of pre-established requirements.

Internships are not required by any of the programs in the School of Photographic Arts and Sciences, but they are strongly encouraged. The recognition and experience internships provide enhance a student's resume and marketability for employment.

### **Admission guidelines**

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

Transfer credit from accredited institutions is evaluated on a course-by-course basis. Transfer credit for photography, art studio, and art history courses is awarded on the basis of a portfolio, in addition to course work with a grade of C or better. The portfolio is reviewed by the program chair. (Please see portfolio guidelines for more information.)

### **Summer transfer programs**

Students who meet the requirements for course and portfolio work may be accepted into one of several summer transfer programs. These 10-week sessions of intensive study bring students to a second- or third-year technical and aesthetic level in their photography programs. Descriptions of the requirements for each program and year level follow.

### **Second-year transfer credit requirements**

Imaging and photographic technology—To enter in the fall quarter at the sophomore or second-year level, transfer candidates must complete a summer transfer program and should have previously completed the following college-level course work: at least one year of mathematics, including an introductory calculus course; at least four liberal arts courses; and two courses in black-and-white photography. Additional photography courses may exempt a transfer student from Photography I. Credit for this is evaluated by a transcript and the submission of a portfolio. Other earned credits also may be accepted for transfer to upper-level years. These include college physics, liberal arts, technical writing, computer programming, chemistry, and additional mathematics.

Biomedical photographic communications—To enter the fall quarter at the sophomore or second-year level, it is suggested that transfer candidates have previously earned the following college-level credits: 12 hours in the liberal arts, eight in science, and 12 in photography. Applicants may submit a transcript and request a transfer credit audit. Transfer credit for Photography I is based on a comprehensive portfolio review, satisfactory completion of an appropriate college photography course, and/or evidence of appropriate work experience.

Advertising photography, fine art photography, photojournalism, or visual media—Normally a minimum of 30 quarter credit

hours, of which 12 are in the liberal arts, and 18 in photography, studio art, or an accepted equivalent. The student may be required to complete the 10-week intensive summer course.

### Third-year transfer credit requirements

Advertising photography, fine art photography, or photojournalism—Normally an applicant must have completed the associate degree or the equivalent of two years of college with a major in photography (a minimum of 30 quarter credit hours of photography), plus a minimum of nine quarter credit hours in studio art courses, 24 quarter credit hours in the liberal arts, and nine quarter credit hours of art history. The student also must complete the 10-week intensive summer courses and Photographic Arts 4, 5 and 6, and must enroll in Materials and Processes of Photography (2076-211, 212, 213), and History and Aesthetics of Photography (2067-306, 307, 308). A portfolio is required.

Advanced entry into advertising photography, fine art photography, or photojournalism requires a portfolio review as well as evaluation of transfer credit.

If a student has completed two or more years of intensive study in photography at an accredited school, he or she may submit a portfolio for evaluation by the program chair.

## Biomedical Photographic Communications

### Michael Peres, Program Chair

<http://biomed.rit.edu>

RIT has the only program in the nation that grants a bachelor of science degree in biomedical photographic communications, an exciting area of visual communication that combines photography and science. The program prepares students for photographic and imaging careers in various institutions such as forensic labs, pharmaceutical companies, and military bases, as well as 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 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. They also take biology and general science 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.

### Cooperative education

At least one co-op 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.

### Careers

Since 1968, various visual communication companies have actively recruited most of the program's nearly 500 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.

### Biomedical photographic communications, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Biomedical Photo I 2061-xxx	15
Materials and Process of Photography 2076-211, 212, 213	9
Survey of Biomedical Photography 2061-213	1
General Education	4
Math or Science#	8
Liberal Arts*	12
First-Year Enrichment 1720-050, 052	2
Wellness Education†	0
Cooperative Education (summer)	Co-op
<b>Second Year</b>	
Biomedical Photography II 2061-301, 302, 303	12
Preparation of Biomedical Visuals I, III 2061-311, 313	6
General Education	8
Open Elective	4
Math or Science#	4
Liberal Arts*	12
Wellness Education†	0
Cooperative Education (optional)	Co-op
<b>Third Year</b>	
Digital Media in Biomedical Photography 2061-316, 318	8
Web Design Using Photography 2061-361	4
Advanced Photography in Biomedical Communication 2061-403	4
Open Electives	8
Math or Science#	8
General Education	4
Liberal Arts*	12
<b>Fourth Year</b>	
Photographic Concentration 2061-501, 502, 503	12
AV Production I 2061-401	4
Advanced Photography in Biomedical Communication 2061-402	4
General Education	18
Open Electives	4-6
<b>Total Quarter Credit Hours</b>	<b>191</b>

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

† Please see Wellness Education Requirement for more information.

# Math or Science requirement includes:

1004-211, 212, or 213, Human Biology I, II, or III (8 credits)

1026-301, Medical Terminology (3 credits)

or

1004-211, 212 or 213, Human Biology I, II, III

Total math or science (24-25 credits)

## Imaging and Photographic Technology

**Andrew Davidhazy, Program Chair**

<http://phototech.rit.edu>

The imaging and photographic technology curriculum blends a contemporary digital photography program with specialized education in technical, professional, industrial, and scientific imaging applications to prepare students for entry into a variety of picture making and related imaging technologies. Imaging and technical skills are complemented by course work in mathematics, computing, science, technical writing, and the liberal arts.

Picture-making aspects of photography are included in all four years of the program, with a transition from a comprehensive course in black-and-white photography to color photography, supporting such diverse areas as high-speed, architectural, and nature photography. Required courses include Photographic Sensitometry (2076-301), Photographic Chemistry (2076-302), Photographic Optics (2076-303), and three courses in color theory and measurement. Beginning in the first year, electronic imaging and computing are emphasized in courses such as Systems Design (2076-401) and Digital Image Processing I (2076-491).

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, electronic imaging and computing, still photography, graphic arts, optics, imaging systems, business, science, and engineering. Opportunities for fourth-year independent study also are available. While each student's core program is similar, graduates' academic backgrounds often vary with their choice of concentration electives.

### Cooperative education

At least two cooperative education placements, normally 10 weeks each in length, are required before 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.

### 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 the imaging and photographic technology industry. The association regularly invites imaging professionals to campus for lectures and demonstrations.

## Imaging and photographic technology, BS degree, typical course sequence

	Qtr.	Cr.	Hrs.
<b>First Year</b>			
Photo I, II, III 2076-201, 202, 203			12
Materials and Processes of Photography 2076-211, 212, 213			9
System Design/Graphic Presentations 2076-401			3
College Algebra and Trigonometry 1016-204			4
Calculus for Engineering Technology I 1016-231**			4
Data Analysis 1016-319			4
Liberal Arts*			12
First-Year Enrichment 1720-050, 052			2
Wellness Education†			0
<b>Second Year</b>			
Photographic Sensitometry 2076-301			4
Technical Photographic Chemistry 2076-302			4
Photographic Optics 2076-303			4
Color Photo Design 2076-311			4
Color Printing Theory 2076-312			4
Chemistry and Color Measurement 2076-313			4
College Physics I, II, III 1017-211, 212, 213			9
College Physics I, II, III Lab 1017-271, 272, 273			3
Liberal Arts*			12
Cooperative Education (summer quarter)			Co-op
<b>Third Year</b>			
Color Management for Photographers 2076-412			4
Imaging Workflows 2076-413			4
Digital Image Processing 2076-491			4
Technical Writing 0502-444			4
<i>Choose one of the following:</i>			
Nature Photography 2076-471			4
Architectural Photography 2076-478			4
Photo Elective			4
General Education Elective			4
Liberal Arts*			12
Open Electives			12
Cooperative Education (summer quarter)			Co-op
<b>Fourth Year</b>			
Introduction to Research 2076-501			3
Survey of Nonconventional Imaging 2076-503			3
High-Speed/Time Lapse 2076-511			3
General Education Electives			24
Open Electives			12
<b>Total Quarter Credit Hours</b>			<b>191</b>

\*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.

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.

## Advertising Photography

**Douglas Manchee, Program Chair**

<http://cias.rit.edu/photography>

The advertising photography program 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 advertising photography 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.

**Professional photographic illustration, advertising photography option, BFA degree, typical course sequence**

		Qtr. Cr. Hrs.
<i>First Year</i>	Photo Arts 1, 2, 3 2067-xxx	15
	Survey of Western Art and Architecture 2039-225, 226, 227	9
	Materials and Processes of Photography 2076-211, 212, 213	9
	Liberal Arts*	12
	First-Year Enrichment 1720-050, 052	2
	Wellness Education†	0
<i>Second Year</i>	Photo Arts 4, 5, 6 2067-xxx	15
	History and Aesthetics of Photography 2067-306, 307, 308	9
	Drawing 2013-211	3
	2D Design 2013-231, 232	6
	Career Seminar 2067-xxx	1
	Liberal Arts*	12
	Wellness Education†	0
<i>Third Year</i>	Advertising Photography 2067-411, 412	10
	Advertising Core‡	5
	Minor or CIAS Electives§	18-20
	Business Elective	4
	Liberal Arts*	12
<i>Fourth Year</i>	Advertising Core‡	10
	Portfolio Development 2067-473	5
	Minor or CIAS Electives#§	12-20
	Open Electives¶	12-15
<b>Total Quarter Credit Hours</b>		<b>184</b>

\* 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  
 ¶ Open electives, minimum of 12 credits required

**Professional photographic illustration, fine art photography option, BFA degree, typical course sequence**

		Qtr. Cr. Hrs.
<i>First Year</i>	Photo Arts 1, 2, 3 2067-xxx	15
	Survey of Western Art and Architecture 2039-225, 226, 227	9
	Materials and Processes of Photography 2076-211, 212, 213	9
	Liberal Arts*	12
	First-Year Enrichment 1720-050, 052	2
	Wellness Education†	0
<i>Second Year</i>	Photo Arts 4, 5, 6 2067-xxx	15
	History and Aesthetics of Photography 2067-306, 307, 308	9
	Drawing 2013-211	3
	2D Design 2013-231, 232	6
	Career Seminar 2067-xxx	1
	Liberal Arts*	12
	Wellness Education†	0
<i>Third Year</i>	Photography as a Fine Art I, II, III 2067-406, 407, 408	12
	Contemporary Issues 2067-416, 417	8
	Modern Art History Elective	3
	Art History/Critical Study/Open Elective	3-4
	Minor or CIAS Elective §	6-9
	Liberal Arts*	12
<i>Fourth Year</i>	Photography as a Fine Art II 2067-506, 507, 508	12
	Minor or CIAS Electives§	18-22
	Open Electives	9-12
<b>Total Quarter Credit Hours</b>		<b>181</b>

\*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.

**Fine Art Photography**

**Dan Larkin, Program Chair**

<http://cias.rit.edu/photography/>

The fine art photography program 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 with a rich potential for personal growth and change 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.

**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.

**Admission requirements**

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

For students who wish to transfer into the program from a variety of academic majors, however, more rapid advancement toward the BFA degree is facilitated if previous course work is in photography or a related area of the arts, including painting, graphic design, communication arts, multimedia, film, or art history.

**Photojournalism**

**William Snyder, Program Chair**

<http://cias.rit.edu/photography/>

World events often are etched in the public’s mind not by words but by photographs. The photojournalism program, which leads to a bachelor of fine arts degree in professional photographic illustration, provides an education in both photographic technique and craft. 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.

**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 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.



## 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 either initially as interns or as full-time employees. A significant number of our students also become self-employed as freelance photographers. They seek freelance assignments with news organizations, picture agencies, stock photo agencies, and editorial photographers.

### Professional photographic illustration, photojournalism option, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Photo Arts 1, 2, 3 2067-xxx	15
Survey of Western Art and Architecture 2039-225, 226, 227	9
Materials and Processes of Photography 2076-211, 212, 213	9
Liberal Arts*	12
First-Year Enrichment 1720-050, 051	2
Wellness Education†	0
<b>Second Year</b>	
Photo Arts 4, 5, 6 2067-xxx	15
History and Aesthetics of Photography 2067-306, 307, 308	9
Drawing 2013-211	3
2D Design 2013-231, 232	6
Career Seminar 2067-xxx	1
Liberal Arts*	12
Wellness Education†	0
<b>Third Year</b>	
Photojournalism I 2067-401, 402, 403	15
Photojournalism Core‡	4-5
Photojournalism Ethics 2067-xxx	4
Portfolio Development 2067-xxx	5
Minor or CIAS Electives§	8
Liberal Arts*	12
<b>Fourth Year</b>	
Photojournalism II 2067-xxx	15
Photojournalism Core‡	8-10
Minor or CIAS Electives§	12
Open Electives#	12-15
<b>Total Quarter Credit Hours</b>	<b>189</b>

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

† Please see Wellness Education Requirement for more information.

‡ Photojournalism core, minimum of 12 credits required

§ RIT-approved minor and/or CIAS elective, minimum 20 credits required

# Open electives, minimum of 12 credits required

## Visual Media

### William DuBois, Program Chair

<http://cias.rit.edu/photography/>

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 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 program broadens photography students'

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 be prepared for careers in photographic studio management, graphic design production management, and printing management industries.

### Professional photographic illustration, visual media option, BFA degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Photo Arts 1, 2, 3 2067-xxx	15
Survey of Western Art and Architecture 2039-225, 226, 227	9
Materials and Processes of Photography 2076-211, 212, 213	9
Liberal Arts*	12
First-Year Enrichment 1720-050, 051	2
Wellness Education†	0
<b>Second Year</b>	
Photo Arts 4, 5, 6 2067-xxx	15
History and Aesthetics of Photography 2060-301, 302, 303	9
Drawing 2013-211	3
2D Design 2013-231, 232	6
Career Seminar 2060-xxx	1
Liberal Arts*	12
Wellness Education†	0
<b>Third Year</b>	
Visual Media Focus§ (graphic design or print media)	8-9
Management Process I, II, III 0681-200, 201, 203	12
Minor or CIAS Electives	12
Liberal Arts*	12
<b>Fourth Year</b>	
Visual Media Capstone Project 2067-512	4
Visual Media Focus or Elective§	4
Minor or CIAS Electives¶	10
Photo Electives‡	16
Open Electives#	12
<b>Total Quarter Credit Hours</b>	<b>184</b>

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

† Please see Wellness Education Requirement for more information.

§ Visual media focus, minimum of 12 credits required.

¶ RIT-approved minor and/or CIAS elective, minimum 20 credits required.

‡ Photo electives, minimum of 16 credits required in fine art photography, biomedical photographic communications, photographic arts and sciences and imaging and photographic technology

# Open electives, minimum of 12 credits required.

## School of Print Media

### Patricia Sorce, Administrative Chair

<http://cias.rit.edu/printmedia>

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 of state-of-the-art equipment in 17 laboratories.

## Scholarships and financial aid

Please refer to the Financial Aid and Scholarships section of this bulletin for extensive information regarding student aid, scholarships, grants, student employment, and loans.

The Education Council of the Graphic Arts Industry offers scholarships. Early in their senior year, high school students should submit their application. Students may obtain information about these scholarships by visiting the Print and Graphics Scholarship Foundation website at [www.pgsf.org](http://www.pgsf.org).

## Cooperative education

The School of Print Media requires two quarters of cooperative education, which may be completed separately or as one long co-op block. Co-op enhances a student's education by complementing formal classroom learning with practical work experience. The Office of Cooperative Education and Career Services assists students in identifying co-op opportunities with a large number of firms in the United States and throughout the world.

Co-op students have been employed by a variety of organizations, including advertising agencies, Web design firms, government agencies, industrial organizations, commercial printers, publishing companies, and service industries. A few students each year co-op as assistant printers on Cunard cruise line's Queen Mary 2 and Queen Victoria cruise ships.

## Transfer credit

The School of Print Media accepts transfer students from other colleges and programs. Transfer credit is granted on a course-by-course basis. Please call the Office of Undergraduate Admissions for more information on transfer admission and transfer credit.

## New Media Publishing

**Barbara Birkett, Program Chair**

<http://cias.rit.edu/printmedia/>

In the new media publishing 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 at the same time 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 greater 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.

## New media publishing, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	New Media Perspectives 2083-201	3
	Imaging for New Media 2083-206	4
	Digital Foundations 2083-216	4
	Typography and Page Design 2083-217	4
	Liberal Arts*	16
	Algebra for Management Science 1016-225	4
	Lab Science	4
	General Education	4
First-Year Enrichment 1720-050, 052	2	
<b>Second Year</b>	Professional and Technical Writing 2082-303**	4
	Digital Asset Management 2082-337	3
	Web Page Production 2083-316	4
	Information Architecture for Publishing Systems 2083-328	4
	Print Production Workflow 2083-346	4
	SPM Concentration	3-4
	Database Management Systems 0112-340	4
	Data Analysis I, II 1016-319, 320	10
	Lab Science†	4
	Introduction to Programming for New Media 4002-230	4
	Liberal Arts*	4
	Wellness Education†	0
	Cooperative Education	0
<b>Third Year</b>	Media Business Basics 2083-416	4
	Writing Choice**	4
	SPM Concentration	9-12
	Liberal Arts*	16
	Open Elective	4
	General Education	12
	Cooperative Education	0
<b>Fourth Year</b>	New Media Team Project 2083-542	4
	General Education	16
	Professional Elective	4
	Open Elective	16
<b>Total Quarter Credit Hours</b>		<b>182</b>

\* 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.

Writing courses: students must take one of these courses – 0502-443; 0502-446; 0502-448; 0502-449; 0502-451; 0502-452; 0502-456; 0502-459; 0502-460; 0502-461 or 0535-403

‡ School of Print Media students are required to complete two approved laboratory science courses. The following courses will meet this requirement:

Biology 1004-211 and 1004-231; 1004-212 and 1004-232

Chemistry 1011-271 and 1101-205; 1011-273 and 1011-277; 1011-215 and 1011-205; 1101-216 and 1101-206

Physics 1017-211; 1017-212; 1017-202; 1017-311; 1017-312 (note: 1017-311 has a pre-requisite of 1016-272 or 1016-281 and 1017-312 has a pre-requisite of 1016-273 or 1016-382 as well as 1017-311)

Medical Science 1026-222

Math 1016-225 or 1016-226; 1016-319, 1016-320

Astronomy 1017-230 and 1017-231; 1017-235 and 1017-236

Imaging Science 1051-215; 1051-217

Environmental Science 1006-202; 1006-203

Environmental Geology 0630-370 and 0630-372

## Accelerated dual degree option

**Twyla Cummings, Coordinator**

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.

# College of Liberal Arts

**Robert Ulin, Dean**

[www.rit.edu/cla/](http://www.rit.edu/cla/)

The College of Liberal Arts serves RIT in three ways: by offering undergraduate and graduate degree programs; by providing the required curriculum in general education for all candidates of baccalaureate and associate degrees offered campus-wide; and by creating opportunities for students and the RIT community to participate in cultural experiences such as theater, music, creative writing, public speaking, and lectures.

Recognizing that future leaders in business, government, science, technology, and the arts work in an increasingly interconnected and complex world, RIT provides students with a rigorous curriculum in the liberal arts. The Liberal Arts General Education Requirements for undergraduate students include introductory and upper-level courses in the humanities as well as the social and behavioral sciences. These courses are designed to provide educational opportunities for comprehensive links between career education, leadership, professional ethics, intercultural understanding, citizenship, and culture.

RIT degree programs are further distinguished by their requirement of a minor or concentration to enhance a student's program of study. Please see the Minors and Liberal Arts Concentrations sections of this bulletin for a complete list of offerings.

The Liberal Arts General Education curriculum seeks to help students develop specific kinds of knowledge, such as:

- understanding of the connections among humanistic, professional, and technological studies;
- building critical awareness of the interactions among society, culture, science, and technology;
- understanding and appreciation of diverse social and cultural perspectives;
- understanding of 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 of human development and behavior;
- broadening critical awareness of the interactions between society and the environment;
- the ability to create, interpret, and evaluate artistic expression and to understand the aesthetic dimension of other forms of expression and experience;
- understanding of the nature and implications of work and career;
- the ability to reason critically and creatively;
- the ability to reason through ethical and values issues and to relate that reasoning to the student's judgments and practice;
- understanding of and proficiency in written, oral, visual, and nonverbal forms of communication; and
- proficiency in the analysis and interpretation of quantitative and qualitative data.

The College of Liberal Arts offers undergraduate degree programs in advertising and public relations, criminal justice, cultural resource studies, economics, international studies, journalism, professional and technical communication, philosophy, psychology, public policy, and urban and community studies. The Liberal Arts Exploration option (see page 109) offers a two-year undeclared option for students who are undecided about their choice of a liberal arts major.

The College of Liberal Arts also provides cultural opportunities for students to engage in activities and classes in the theater, music, and creative writing disciplines. Faculty members offer extracurricular leadership for student groups, recitals, and productions, as well as for Signatures, the student literary magazine. In addition, the college sponsors several lecture series that bring speakers, poets, writers, and civic leaders to campus.

## Admission guidelines

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

## Faculty

The faculty of the college are selected nationally from candidates with advanced degrees in the social sciences and humanities. These faculty members are dedicated to providing students with rich and meaningful teaching and learning experiences and to continuing their own engagement in their scholarly fields.

## 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. In addition, academic advisers in the college's Office of Student Services can provide assistance with registration, scheduling, academic records, and referrals to other support areas within RIT.

**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.

## Part-time and evening programs

In the evening, the college offers many upper-division humanities and social science courses as well as the core courses of the Liberal Arts General Education curriculum required in the baccalaureate programs of part-time evening students.

Courses are scheduled one or two nights a week, Monday through Thursday, or on Saturday. Each course is four quar-

ter credit hours. Part-time students can register for liberal arts courses offered during daytime hours if their schedules permit. Diploma or certificate courses normally will not be used toward completion of the Liberal Arts General Education Requirements.

It is not necessary to be enrolled in an RIT degree program to register for liberal arts courses on a part-time basis. Part-time and evening students are strongly encouraged to contact the college's Office of Student Services at (585) 475-2444 for assistance in selecting and registering for courses.

### Summer courses

The college offers a number of courses each summer in English, foreign languages, science and humanities, and social sciences as well as degree program courses in the college's academic areas of study. Information concerning summer courses can be obtained by contacting the Liberal Arts Office of Student Services at (585) 475-2444 or by requesting information from the Office of Part-time Enrollment Services at (585) 475-2229.

## Advertising and Public Relations

**Bruce A. Austin, Department Chairperson**

[www.rit.edu/apr](http://www.rit.edu/apr)

The bachelor of science degree in advertising and public relations prepares students to create persuasive messages for a variety of media. Students will 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.

### Professional core

As part of the program's degree requirements, students take a professional core of four courses (16 quarter credit hours) from the department of marketing in the E. Philip Saunders College of Business. All students are required to take Principles of Marketing (0105-363) as well as three other courses from among the following: Internet Marketing (0105-440), Business to Business e-Commerce (0105-445), Buyer Behavior (0105-505), Database Marketing (0105-554), Marketing in the Global Environment (0105-555), Professional Selling (0105-559), and Integrated Marketing Communications (0105-560).

### 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.

### Curriculum

#### Required communication courses (60 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
- 0535-481 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)

#### APR elective (4 quarter credit hours)

#### Professional core (16 quarter credit hours)

- 0105-363 Principles of Marketing
- plus any *three* of the following:
- 0105-440 Internet Marketing
  - 0105-445 Business to Business e-Commerce
  - 0105-505 Buyer Behavior
  - 0105-554 Database Marketing
  - 0105-555 Marketing in the Global Environment
  - 0105-559 Professional Selling
  - 0105-560 Integrated Marketing Communication

#### Advertising and public relations, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<i>First Year</i>	
Foundations of Communication 0535-200	4
Public Relations 0535-421	4
Public Speaking 0535-501	4
Digital Design in Communications 0535-462	4
Web Foundations 4002-206	4
Liberal Arts*	8
Mathematics and Science Requirements**	16
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0



<b>Second Year</b>	Persuasion 0535-481	4
	Principles of Advertising 0535-461	4
	Visual Communication 0535-450	4
	Mass Communications 0535-482	4
	APR Elective	4
	Professional Core	12
	Liberal Arts*	16
	Wellness Education†	0
<b>Third Year</b>	Theories of Communication 0535-445	4
	Campaign Management and Planning 0535-463	4
	Professional Core	4
	General Education Electives	8
	Liberal Arts*	8
	Mathematics and Science Requirement**	4
	University-wide Electives	8
	Cooperative Education (two quarters)	0
<b>Fourth Year</b>	Quantitative Research Methods 0535-315	4
	Qualitative Research Methods 0535-316	4
	Public Relations Writing 0535-464	4
	Copywriting and Visualization 0535-460	4
	Senior Thesis in Communication 0535-595	4
	Liberal Arts*	12
	University-wide Electives	16
	<b>Total Quarter Credit Hours</b>	<b>182</b>

\*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.

## 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 advertising agencies and public relations firms as well as businesses and nonprofit sectors. 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.

## Advisers

Every advertising and public relations 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, professional core areas, 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 17 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.

## Freshman and transfer admission

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

Most students who transfer into the advertising and public relations program with associate degrees can complete the program

in two years. Transfer credit is evaluated on a course-by-course basis and is assigned where it is most appropriate. Students also can transfer into the program from within RIT.

## 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](http://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

### John Klofas, Department Chairperson

[www.rit.edu/cla/criminaljustice](http://www.rit.edu/cla/criminaljustice)

The bachelor of science degree in criminal justice offers students a broad education. The curriculum prepares students for a wide range of careers in criminal justice, provides continuing education for professionals already employed in criminal justice positions, and offers a strong academic foundation for graduate or law school.

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 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.

## 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.

During the junior and senior years of the program students select professional electives in a specific area of interest from courses offered within the program. Students may select courses from the College of Liberal Arts or any of RIT's seven other colleges. A faculty adviser may assist you in choosing courses that will enhance your program and meet your personal or professional career objectives. The criminal justice program offers con-

centrations in criminology, law enforcement, law corrections, and security. Other concentrations, planned according to individual career goals, may include courses in computer science, management, photography, and liberal studies.

### **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 level, 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, with many advancing to administrative positions. A significant number of alumni have used the program as a foundation for law school and have entered the legal profession as prosecutors, public defenders, and private practice lawyers. We have many graduates serving in U.S. Attorney Generals' 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.

### **Technology information and computer crime**

This program prepares students for employment in the emerging field of criminal justice technology development and administration as well as numerous positions within the criminal justice system, the managed security industry, and the federal intelligence community for which a background in information technology is preferred. Courses in this concentration include Criminal Justice Technology, Computer Crime, and Investigative Techniques. Because theories of crime and management—as well as independent research, critical thinking, and scholarly writing—are emphasized, students are well-prepared to undertake graduate study in a variety of fields including, but not limited to, information technology, criminology, public policy, and public or business administration.

### **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 (30 hours a week) as interns working with attorneys in the office of the district attorney, public defender, or state attorney general; 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.

### **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 30 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.

### **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.

### **The 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.

### **Professional elective options**

One of the program's strengths is the professional electives students may take from other colleges at RIT, thus enabling them to develop a concentration in a professional area related to their career goals. The following courses illustrate those offered periodically within the program. A student selects professional elective courses with the advice of a faculty adviser.

## Corrections

0501-405	Major Issues in Criminal Justice: Correctional Administration
0501-405	Major Issues in Criminal Justice: Prisoner Reentry
0501-405	Major issues in Criminal Justice: Delinquency and Justice
0501-405	Major Issues in Criminal Justice: Wrongful Convictions
0501-409	Legal Rights of the Offender
0501-510	Interview and Counseling in the Criminal Justice System
0501-511	Alternatives to Incarceration
0513-457	Constitutional Law

## Criminology

0501-405	Major Issues in Criminal Justice: Victimology
0501-405	Major Issues in Criminal Justice: Prostitution and Vice
0501-405	Major Issues in Criminal Justice: Crime, Justice and Community
0501-405	Major Issues in Criminal Justice: Domestic Violence
0501-405	Major Issues in Criminal Justice: Seminar on Sexual Violence
0501-405	Major Issues in Criminal Justice: Minority Groups and the Criminal Justice System
0501-405	Major Issues in Criminal Justice: Crime Mapping
0501-405	Major Issues in Criminal Justice: Crime Analysis
0501-446	Women and Crime
0501-505	Corporate and White-Collar Crime
0501-507	Computer Crime
0501-522	Victimless Crime

## Law

0501-405	Major Issues in Criminal Justice: Legal Research
0501-405	Major Issues in Criminal Justice: Issues in Criminal Prosecution
0501-405	Major Issues in Criminal Justice: Wrongful Convictions
0501-405	Major Issues in Criminal Justice: Law, Justice and Society
0501-405	Major Issues in Criminal Justice: Cyberlaw
0501-409	Legal Rights of the Offender
0501-506	Evidence
0501-517	Comparative Criminal Justice System
0501-522	Victimless Crime
0513-457	Constitutional Law

## Law Enforcement

0501-307	Investigative Techniques
0501-405	Major Issues in Criminal Justice: Administrative Concepts of Law Enforcement
0501-405	Major Issues in Criminal Justice: Crime Mapping
0501-405	Major Issues in Criminal Justice: Crime Analysis
0501-405	Major Issues in Criminal Justice: Corruption and the Police
0501-405	Major Issues in Criminal Justice: Hostage Taking and Terrorism
0501-405	Major Issues in Criminal Justice: Police Community Relations

0501-405	Major Issues in Criminal Justice: Substance Abuse
0501-410	Management in Criminal Justice
0501-413	Civil Disobedience and Criminal Justice
0501-505	Corporate and White-Collar Crime
0501-506	Evidence
0501-507	Computer Crime
0501-522	Victimless Crime
0513-457	Constitutional Law

## Security

0501-307	Investigative Techniques
0501-507	Computer Crime
0501-529	Public and Private Safety
0501-536	Seminar in Security

## Related professional areas

With the approval of the faculty adviser, a student may select an additional professional elective concentration from courses offered by the College of Liberal Arts or any of the other colleges of the university. Many students develop special concentrations in accounting, computer science, management, or social work.

## Criminal justice, BS degree, typical course sequence

	Qtr.	Cr.	Hrs.
<b>First Year</b>			
Criminology 0501-400			4
Seminar in Criminal Justice 0501-201			4
Liberal Arts*			12
Technology in Criminal Justice 0501-406			4
Courts 0501-456			4
Corrections 0501-441			4
Law Enforcement in Society 0501-443			4
Mathematics and Science Requirement**			8
Current Issues in Criminal Justice 0501-460			2
Wellness Education†			0
Cooperative Education (optional)			Co-op
<b>Second Year</b>			
Juvenile Justice 0501-440			4
Approved Electives			8
Concepts in Criminal Law 0501-444			4
Professional Elective			4
Liberal Arts*			12
Mathematics and Science Requirement‡			12
Current Issues in Criminal Justice 0501-460			2
Wellness Education†			0
Cooperative Education (optional)			Co-op
<b>Third Year</b>			
Theories of Crime and Criminality 0501-528			4
Management in Criminal Justice 0501-410			4
Research Methods I, II 0501-401, 541			8
Professional Elective			4
Approved Electives			16
Liberal Arts*			12
Cooperative Education (optional)			Co-op
<b>Fourth Year</b>			
Field Experience 0501-403			8
Interviewing and Counseling in Criminal Justice 0501-510			4
Professional Elective			4
Seminar in Criminal Justice and Public Policy 0501-526			4
Liberal Arts*			12
<b>Total Quarter Credit Hours</b>			<b>180</b>

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

\*\* Please see Mathematics and Science Requirements for more information.

† Please see Wellness Education Requirement for more information.

## Cultural Resource Studies

**Tina Olsin Lent, Department Chairperson**

[www.rit.edu/cla/crs](http://www.rit.edu/cla/crs)

The bachelor of science degree in cultural resource studies is an innovative, interdisciplinary, technically-based program that prepares students for careers in museums, archives, photo collections, and libraries. 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: cultural resource and information studies or art conservation.

### Professional tracks

Both professional tracks 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.

### Internships

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.

### 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.

### Curriculum

#### *Cultural Resource and Information Studies Track*

##### Program core

- 0533-370 Introduction to Museums and Collecting
- 0533-423 Technologies of Inorganic Cultural Materials

- 0533-422 Technologies of Organic Cultural Materials
- 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

#### *Art Conservation Track*

##### Program Core

- 0533-370 Introduction to Museums and Collecting
- 0533-423 Technologies of Inorganic Cultural Materials
- 0533-422 Technologies of Organic Cultural Materials
- 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

### Cultural resource studies, BS degree, typical course sequence, cultural resource and information studies track

	Qtr.	Cr.	Hrs.
<b>First Year</b>	Introduction to Museums and Collection 0533-370		4
	Survey of Western Art and Architecture I, II, III 2039-225, 226, 227		9
	Freshman Studio		2
	Introduction to Photography 2067-264		4
	Liberal Arts*		12
	Mathematics and Science Requirements**		13
	First-Year Enrichment 1105-051, 052		2
<b>Second Year</b>	Technology of Inorganic Cultural Materials 0533-423		4
	Technology of Organic Cultural Materials 0533-422		4
	Freshman Studio		2
	Liberal Arts*		24
	Mathematics and Science Requirements**		8
	General Education Electives		8
	Wellness Education†		0
<b>Third Year</b>	Display and Exhibition Design 0533-425		4
	Collections Management and Museum Administration 0533-426		4
	Fundraising, Grant Writing, and Marketing for Nonprofit Institutions 0533-427		4
	Business Core		12
	Management Information Systems Track		12
	Institute Free Elective		12
	<b>Fourth Year</b>	Conservation of Cultural Materials 0533-438	
Legal and Ethical Issues for Collecting Institutions 0533-424			4
Forensic Investigation of Art and Research Methods 0533-437			4
Senior Thesis 0533-510			4
Management Information Systems Track			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 Mathematics and Science Requirements for more information.

† Please see Wellness Education Requirement for more information.

### Cultural resource studies, BS degree, typical course sequence, art conservation track

	Qtr.	Cr.	Hrs.
<b>First Year</b>	Introduction to Museums and Collection 0533-370		4
	Survey of Western Art and Architecture I, II, III 2039-225, 226, 227		9
	Freshman Studio		2
	Introduction to Photography 2067-264		4
	Liberal Arts*		12
	Mathematics and Science Requirements**		13
	First-Year Enrichment 1105-051, 052		2

<b>Second Year</b>	Technology of Inorganic Cultural Materials 0533-423	4
	Technology of Organic Cultural Materials 0533-422	4
	Freshman Studio	2
	Organic Chemistry I, II, III 1013-231, 232, 233	12
	Liberal Arts*	16
	Mathematics and Science Requirements**	4
	General Education Electives	8
Wellness Education†	0	

<b>Third Year</b>	Drawing I, II, III 2013-211, 212, 213	9
	Liberal Arts	8
	General Education Electives	8
	Institute Free Elective	17

<b>Fourth Year</b>	Conservation of Cultural Materials 0533-438	4
	Legal and Ethical Issues for Collecting Institutions 0533-424	4
	Forensic Investigation of Art and Research Methods 0533-437	4
	Senior Thesis 0533-510	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 Mathematics and Science Requirements for more information.

† Please see Wellness Education Requirement for more information.

### 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.

### Economics

#### Michael J. Vernarelli, Department Chairperson

[www.rit.edu/cla/economics](http://www.rit.edu/cla/economics)

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.

### 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. Students 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.

### Cooperative education

Students in the economics program who participate in co-op may be placed with financial and brokerage institutions, government offices, and large corporations. Co-op can be taken during any quarter, including summer, after the sophomore year.

### 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.

#### Economics, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Foundational Seminar in Economics 0511-200	1
Principles of Microeconomics 0511-211	4
Principles of Macroeconomics 0511-402	4
Managerial Economics 0511-459	4
Choose one of the following math sequences:	8
Algebra and Calculus for Management Science 1016-225, 226	
Calculus A, B 1016-271, 272	
Computer Science Elective	4
Liberal Arts*	20
Wellness Education†	0
<b>Second Year</b>	
Monetary Analysis and Policy 0511-452	4
Applied Econometrics 0511-457	4
Economic Forecasting 0511-458	4
Data Analysis 1016-319	4
Financial Accounting 0101-301	4
Choose of the following:	
Management Accounting 0101-302	4
Game Theory: Economic Applications 0511-464	4
Liberal Arts*	
General Education Electives	12
Laboratory Science	8
Wellness Education†	0

<b>Third Year</b>	
Intermediate Microeconomic Theory 0511-453	4
Intermediate Macroeconomic Theory 0511-455	4
Mathematical Methods for Economics 0511-460	4
Corporate Finance 0104-441	4
Free Electives	8
Computer Science Elective	4
Liberal Arts*	12
Programming Elective	4
<b>Fourth Year</b>	
International Trade and Finance 0511-454	4
Industrial Organization 0511-456	4
Benefit Cost Analysis 0511-450	4
Free Electives	19
Math Elective	4
General Education Electives	8
<b>Total Quarter Credit Hours</b>	<b>180</b>

\*See Liberal Arts General Education Requirements for more information.  
†See Wellness Education Requirement for more information.

## International Studies

**Paul Grebinger, Department Chairperson**

[www.rit.edu/cla/sociology/internationalstudies](http://www.rit.edu/cla/sociology/internationalstudies)

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 international studies program allows students to choose a specialization that is focused on either a world region or a function. The regional fields are East Asia, Latin America, Europe, the Middle East, and Africa. 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 a language in that region: for example Chinese or Japanese in the East Asia track; Portuguese or Spanish in the Latin American track; or French, German, Portuguese, Russian, Italian, or Spanish in the European track.

### 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 this option.

## Journalism

**Bruce A. Austin, Department Chairperson**

[www.rit.edu/journalism](http://www.rit.edu/journalism)

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 story-telling.

The journalism degree 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. Students 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.

### The professional core

The program's 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.

### Curriculum

#### Required communication courses (60 quarter 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

## 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 with a BS degree in international studies are prepared for a range of careers in the private, governmental, and nonprofit sectors. There is increased demand by companies with foreign operations in Africa, the Middle East, East Asia, Latin America, and Europe for graduates who are competent to interact with people from different cultures and societies, comprehend science and technology policy issues, are cognizant of the international dimensions of business operations, and are able to communicate in the languages commonly spoken in these parts of the world. In addition, the international studies program prepares students for graduate study in public and international affairs, business, law, and social science studies.

### International studies, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Liberal Arts*	12
Mathematics and Science Requirement**	8
Foreign Language Requirement	12
Introduction to International Studies 0524-210	4
Introduction to International Relations 0513-214	4
Modern U.S. Foreign Relations 0507-441	4
Cultures in Globalization 0510-440	4
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
International Trade and Finance 0511-454	4
Liberal Arts*	12
Mathematics and Science Requirement**	8
Data Analysis I and II 1016-319, 320	10
Foreign Language Requirement	12
Web Foundations 4002-200	4
Wellness Education†	0
<b>Third Year</b>	
International Studies Track	8
Foreign Language Requirement	16
Liberal Arts*	12
Mathematics and Science Requirement**	4
Open Electives	8
International Experience	0
<b>Fourth Year</b>	
International Studies Track	8
Capstone Seminar 0524-501	4
Liberal Arts*	12
Open Electives	12
<b>Total Quarter Credit Hours</b>	<b>182-184</b>

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

\*\* Please see Mathematics and Science General Education Curriculum.

† Please see Wellness Education Requirement for more information.

## University-wide electives (20 credit hours)

Five courses (chosen as electives)

## Journalism elective (4 quarter credit hours)

### The Professional Core (21-23 credit hours)

- 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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Introduction to Journalism 0535-201	4
Mass Communications 0535-482	4
History of Journalism 0535-471	4
Newswriting 0535-416	4
Web Foundations 4002-206	4
Liberal Arts*	12
Mathematics and Science Requirement**	16
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Information Gathering 0535-405	4
Newswriting II 0535-417	4
Digital Design in Communication 0535-462	4
Reporting in Specialized Fields 0535-474	4
News Editing 0535-472	4
Theories of Communication 0535-445	4
eJournalism 0535-473	4
General Education Elective	4
Liberal Arts*	8
Professional Core	6-8
Wellness Education†	0
<b>Third Year</b>	
eJournalism II 0535-476	4
Law and Ethics of the Press 0535-470	4
Professional Core	6-8
Liberal Arts*	12
General Education Electives	8
University-wide Electives	8
Mathematics Requirement**	4
Cooperative Education (two quarters)	0
<b>Fourth Year</b>	
Public Relations Writing 0535-464	4
Journalism Elective	4
Senior Project 0535-590	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 Mathematics and Science General Education Curriculum for more information.

†Please see Wellness Education Requirement 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.

## 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, professional core areas, 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 17 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.

## Freshman and transfer admission

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

Students can transfer into journalism from other colleges and universities, as well as from within RIT. Most students who transfer with associate degrees can complete the journalism degree in two years. Transfer credit is evaluated course by course and is assigned where it is most appropriate.

## 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 college also offers an MS degree in communication and media technologies. Please consult RIT's Graduate Bulletin for more information.



## Philosophy

**Brian Schroeder, Department Chairperson**  
[www.rit.edu/cla/philosophy](http://www.rit.edu/cla/philosophy)

The BS degree in philosophy offers a curriculum that 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 students 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:

- 0509-442 Philosophy of Art/Aesthetics
- 0509-445 Social and Political Philosophy
- 0509-446 Philosophy of Law

#### Reasoning/Epistemology

Choose one of the following:

- 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 the student's professional core. Five pre-approved 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

#### Seminar in Philosophy

This course is an examination of a selected area or topic of philosophy at an advanced undergraduate level.

#### Senior Thesis

This course is required during the senior year. Students choose a faculty member to serve as a primary adviser. With their assistance, students research and write a substantial paper on a specific

philosophical topic. Students will be encouraged to investigate a particular question in depth, likely building on their philosophy specialization and their professional core. The finished thesis will be 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 the student's 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

		Qtr. Cr. Hrs.
<b>First Year</b>	Ancient Philosophy 0509-456	4
	Modern Philosophy 0509-457	4
	Ethical Theory 0509-476	4
	Professional Core or Free Electives	8
	Liberal Arts*	16
	Mathematics and Science Requirement**	12
	First-Year Enrichment 1105-051, 052	2
Wellness Education†	0	
<b>Second Year</b>	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
<b>Third Year</b>	Philosophy Specialization	12
	Professional Core or Free Electives	8
	Program Electives	12
	Liberal Arts*	12
	General Education Electives	4
<b>Fourth Year</b>	Seminar in Philosophy 0509-450	4
	Senior Thesis 0509-595	4
	Philosophy Specialization	4
	Professional Core or Free Elective	4
	Program Electives	12
	General Education Electives	12
<b>Total Quarter Credit Hours</b>		<b>184-186</b>

\* 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.

### 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.

## Professional and Technical Communication

### Bruce A. Austin, Department Chairperson

[www.rit.edu/ptc](http://www.rit.edu/ptc)

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 one of RIT's professional or technical programs. 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	Communications 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

As part of their degree requirements, students 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 another RIT program. 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.

## General education electives

### Communication electives

Communication electives include:

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 Relations Writing
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
0535-520	Intercultural Communication
0535-525	Special Topics in Communication
0535-534	Communication and Documentary Film
0535-550	Film and Society
0535-580	International Media
0535-590	Senior Project

### Professional and technical communication, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Foundations of Communication 0535-200	4
Rhetorical Theory 0535-311	4
Public Speaking 0535-501	4
Digital Design in Communication 0535-462	4
Web Foundations 4002-206	4
Liberal Arts*	8
Mathematics and Science Requirement**	16
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Persuasion 0535-481	4
Technical Writing 0502-444	4
Visual Communication 0535-450	4
Mass Communications 0535-482	4
PTC Elective	4
Professional Core	12
Liberal Arts*	16
Wellness Education†	0

<b>Third Year</b>	
Theories of Communication 0535-445	4
Communications Law and Ethics 0535-412	4
Professional Core	8
General Education Electives	16
Mathematics and Science Requirement**	4
University-wide Elective	4
Cooperative Education (two quarters)	0
<b>Fourth Year</b>	
Quantitative Research Methods 0535-315	4
Critical Research Methods 0535-317	4
Professional Writing 0535-532	4
Writing the Technical Manual 0502-446	4
Senior Thesis in Communication 0535-595	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.

## Cooperative education

Professional and technical communication 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.

A broad range of co-op opportunities is available. There is no restriction on geographic location as long as the co-op 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 Memorial Art Gallery, the Chicago Hearing Society, Eastman Kodak Co., City of New York Parks & Recreation, and the U.S. House of Representatives.

## Students

The size of the program, averaging about 80 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, the college's Liberal Smarts newsletter, 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 17 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.

## Freshman and transfer admission

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

Students may transfer into the professional and technical communication program from other colleges and universities, as well as from within RIT. Most students who transfer with associate degrees can complete the journalism degree in two years. Transfer credit is evaluated course by course and is assigned where it is most appropriate.

## 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.

The program also prepares students for graduate study in law, public relations, communication, health services, and management. The department of communication offers an MS degree in communication and media technologies. Please consult RIT's Graduate Bulletin for more information.

## Psychology

### Andrew Herbert, Department Chairperson

[www.rit.edu/cla/psychology](http://www.rit.edu/cla/psychology)

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, each student is assigned a faculty adviser to mentor his or her progress throughout the duration of the program. Students also are provided with academic advising, discipline awareness, curriculum planning strategies, and career counseling through the program's Freshman Seminar.

## Curriculum

The BS degree in psychology is unique and encompasses three key elements: the technical/professional concentration or minor, a choice of four interdisciplinary tracks, and a cooperative education requirement.

**Technical/professional concentration or minor:** 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 a technical concentration or minor to be completed.

**Four 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 visual perception track focuses on the human perceptual systems. Vision is presented as an integration of anatomy, physiology, and psychophysics. The track covers rapidly developing topics such as the retinal mosaic and the sensory system's amazing plasticity. It stresses the most recent work 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 and problem solving, attention, and perception. The track explores the interaction of human factors, psychology, and technology.

The biopsychology track studies the brain as the biological basis of behavior. It focuses on topics such as the right and left brain with their specific functions, brain injury, and neuropsychological testing. 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 problems. This track prepares students for future graduate programs in mental health.

## 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.

## Freshman and transfer admission

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

Students from other institutions may apply for transfer into the program. The point of entry into the program is highly flexible, since there is only one fixed sequence: Introduction to Psychology (0514-210), Scientific Writing (0514-315), Psychological Statistics (0514-350), and Experimental Psychology (0514-400). The technical concentration component shares a number of common courses with other programs, providing internal flexibility for students from other RIT programs who may retain credits from some of the technical courses they have completed previously.

## Career opportunities

The unique requirements of this program ensure that each student should be well-prepared for advanced study in psychology, employment in industry or in a human service agency, or other career opportunities.



## Psychology, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Freshman Seminar 0514-201	1
	Introduction to Psychology 0514-210	4
	Childhood and Adolescence 0514-440-	4
	Cognitive Psychology 0514-443	4
	Social Psychology 0514-444	4
	Human Biology I, II with Lab 1004-211, 212, 231, 232	8
	Algebra for Management Science 1016-225	4
	Web Foundations or Higher 4002-206	4
	Liberal Arts*	12
	First-Year Enrichment I, II 1105-051, 052	2
	Wellness Education†	
<b>Second Year</b>	Scientific Writing 0514-315	4
	Psychological Statistics 0514-350	4
	Experimental Psychology 0514-400	4
	Psychology of Personality 0514-446	4
	Abnormal Psychology 0514-447	4
	Industrial/Organizational Psychology 0514-448	4
	Data Analysis I, II 1016-319, 320	8
	Liberal Arts*	12
	Technical/Professional Concentration	4
	Cooperative Education (summer quarter)	Co-op
	<b>Third Year</b>	Interdisciplinary Courses
Technical/Professional Concentration		8
Liberal Arts*		20
University Electives		8
Cooperative Education (summer quarter)		Co-op
<b>Fourth Year</b>	Interdisciplinary Course	4
	University Electives	12
	Senior Project I, II in Psychology 0514-596, 597	8
	General Education Electives	16
<b>Total Credit Hours</b>		<b>183</b>

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

†Please see Wellness Education Requirements for more information.

## Public Policy

**James J. Winebrake, Department Chairperson**

[www.rit.edu/cla/publicpolicy](http://www.rit.edu/cla/publicpolicy)

The public policy program at RIT 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 student's interests. Students also have an option of tailoring a track to their interests.

**Interdisciplinary**—A sequence of eight public policy courses ensures the 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.

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 non-profit sectors.

### Accelerated dual degree option

Students can choose a four-year BS degree or 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.

### 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 are offered through other programs and colleges of the university, including those that provide a firm grounding in the science and technology aspects of the chosen track. 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.

### 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.

### Public policy, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Public Policy Core	
Foundations of Public Policy 0521-400	4
Science and Technology Policy 0508-441	4
Foundations	
Principles of Microeconomics 0511-211	4
Principles of Macroeconomics 0511-402	4
American Politics 0513-211	4
Mathematics and Science Requirement**	20
Liberal Arts*	4
Free Elective	4
Policy Colloquium	0
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Public Policy Core	
Values and Public Policy 521-401	4
Qualitative Policy Analysis 521-406	4
Foundations	
Benefit-Cost Analysis 0511-450	4
Data Analysis I 1016-319	4
Choose one of the following:	
Applied Econometrics 0511-457	4
Data Analysis II 1016-320	4
American Political Thought 0513-458	4
Environment and Society 0508-460	4
Liberal Arts*	20
Policy Colloquium	0
Wellness Education†	0
<b>Third Year</b>	
Public Policy Core	
Policy Analysis I, II, III 0521-402, 403, 404	12
Public Policy Track Courses	12
Liberal Arts*	12
Free Electives	12
Cooperative Education (Summer)	Co-op
Policy Colloquium	0
<b>Fourth Year</b>	
Public Policy Core	
Senior Project I 0521-405	4
Technological Innovation and Public Policy 0521-408	4
Public Policy Track Courses	12
Liberal Arts*	12
Free Electives	4
<b>Total Quarter Credit Hours</b>	<b>182</b>

\* 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 MS classes in their fourth year if they are enrolled in the BS/MS program. This increases total quarter credit hours to 198.

## Urban and Community Studies

**Paul Grebinger, Department Chairperson**

[www.rit.edu/cla/sociology/urbancomm/](http://www.rit.edu/cla/sociology/urbancomm/)

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.

The bachelor of science program in urban and community studies provides an awareness of the institutional and structural forces that influence the development of urban and rural areas as well as the lives of their residents. The program's interdisciplinary combination of classes in the sciences, computing, and the liberal arts 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 and knowledgeable of urban theories, policies, and practices. Upon graduation, students will be equipped to take on positions in many fields, including city government, social services, local or international development, and urban planning.

## Curriculum

### Program core courses

Students will complete nine core courses that provide a foundation of knowledge in urban and communities studies.

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, public health, land use, and transportation. 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 affect neighborhoods and entire regions. Special attention is paid to issues such as urban poverty, racial segregation, gender inequality, educational challenges, and urban family life.

## Cooperative education and field experience

Students will perform field work with local agencies and organizations through summer- or quarter-long internships and co-op assignments.

## Accelerated dual degree option

Students may wish to pursue an accelerated BS/MS degree. Students complete the BS degree in urban and community 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 this option.

### Urban and community studies, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Urban and Community Studies Core:	
Choose one of the following courses:	4
Foundations of Sociology 0515-210	
Cultural Anthropology 0510-210	
The Urban Experience 0515-442	4
Social Change 0515-444	4
Mathematics and Science Requirements**	22
Liberal Arts*	12
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Urban and Community Studies Core:	
Quantitative Methods 0526-440	4
Qualitative Methods 0515-406	4
Diversity in the City 0515-485	4
Global Cities 0510-445	4
Urban Planning and Policy 0515-413	4
Introduction to Multimedia: The Internet and the Web 4002-320	4
Liberal Arts*	24
Wellness Education†	0
<b>Third Year</b>	
Urban and Community Studies Core:	
GIS Applications in Urban and Community Studies 0526-441	4
UCS Track	24
General Education Electives	20
Cooperative Education or Internship (summer)	Co-op
<b>Fourth Year</b>	
UCS Track	4
General Education Electives	12
Senior Thesis	4
Free Electives	20
<b>Total Quarter Credit Hours</b>	<b>184</b>

\*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.

## Liberal Arts Exploration

**John S. Smithgall, Program Director**

[www.rit.edu/cla/exploration](http://www.rit.edu/cla/exploration)

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 86 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.

### Liberal Arts Exploration typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Liberal Arts*	20
Mathematics and Science Requirements**	8
Liberal Arts Electives (chosen in consultation with an adviser)	12
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Liberal Arts*	16
Mathematics and Science Requirements**	12
Web Foundations 4002-206	4
Liberal Arts Electives (chosen in consultation with an adviser)	12
Wellness Education†	0
<b>Total Quarter Credit Hours***</b>	<b>86</b>

\*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 major selected.

# College of Science

*Sophia Maggelakis, Interim Dean*

[www.science.rit.edu](http://www.science.rit.edu)

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.

## Faculty and research

The College of Science has more than 120 faculty members teaching in the fields of science, health, and mathematics. All are committed to the education of undergraduate 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. Our undergraduates 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 in the College of Science 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.

## Facilities

The College of Science's programs are conducted in three major facilities on campus: the Gosnell Building, the Chester F. Carlson Center for Imaging Science, and the Center for Bioscience Education and Technology.

The Gosnell Building has nine classrooms, 22 teaching laboratories, and 16 research laboratories that provide space for labo-

ratory course work and student research projects. Some of the facilities within the Gosnell Building have specialized purposes. For example, we have a thin films laboratory, an animal care facility, a diagnostic medical imaging laboratory, a plasma etching laboratory, an electronics laboratory, and a nuclear magnetic resonance laboratory.

The Bates Science Study Center in the Gosnell Building provides a comfortable, wireless computing environment for study groups and individual tutoring sessions with faculty. The 60,000-square-foot south wing of the Gosnell Building—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, microdensitometry, optics, biomedical imaging, and remote sensing. The Munsell Color Science Building 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, health-related work, and science. The College of Science also operates an observatory on campus.

## Cooperative education

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, though 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, chemistry (environmental option), biochemistry, and polymer chemistry 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.

**Internships**

Students in the diagnostic medical sonography (ultrasound) and physician assistant programs do not participate in co-op. Instead, they spend three years on campus doing academic work and then gain invaluable clinical experience during the fourth year at clinical training sites.

**Accreditation**

Programs in chemistry, chemistry with an environmental option, biochemistry, and polymer chemistry are approved by the Committee on Professional Training of the American Chemical Society. The diagnostic medical sonography program is accredited by the Joint Review Committee on Education in Diagnostic Medical Sonography of the Commission on Accreditation of Allied Health Education Programs. The professional phase (years three and four) of the physician assistant program has accreditation from the Accreditation Review Committee for the Physician Assistant.

**Additional information**

**Academic 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.

**Our graduates:** The best way to evaluate an academic program is to look at the success of its graduates. Recent surveys show that of College of Science graduates, more than 90 percent of respondents indicated that they are employed in a field related to their degree, and the same percentage expressed satisfaction with their work.

Employers report that graduates have good preparation for employment in business and industry and, because of their work experience, immediately fit into jobs with a high degree of initiative and purpose.

One-fourth of students enter graduate or professional school directly after graduation. More return for further education at the graduate level as part of their career development. Many RIT graduates find that their laboratory, research, and co-op experiences assist them in completing graduate-level research projects more easily than students from other universities.

**Minors:** RIT offers more than 90 minors to choose from; among those are minors offered by the College of Science. These include astronomy, environmental science, environmental modeling, exercise science, imaging science, mathematics, optical sciences, physics, and statistics. A minor provides students with a secondary area of expertise to complement their major. Students interested in pursuing a minor are advised to consult with their faculty adviser and the College of Science department offering the minor. For more information, see [www.science.rit.edu](http://www.science.rit.edu).

**Graduate degrees:** The College of Science offers master of science degrees in applied and computational mathematics, bioinformatics, chemistry, clinical chemistry, color science, environmental science, and imaging science. A master of science degree in materials science and engineering is offered jointly by the College of Science and the Kate Gleason College of Engineering. A master of science degree and a doctorate degree in astrophysical sciences and technology is offered jointly by the College of Science's department of physics, school of mathematical sciences, and Center for Imaging Science. The Center for Imaging Science also offers doctorate degrees in imaging science and color science.

**Premedical Studies Advisory Program**

**Kristen M. Waterstram-Rich, Director**

[www.premed.rit.edu](http://www.premed.rit.edu)

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, room 2102,

in the College of Science or call (585) 475-7105 to arrange an appointment.

**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
Biomedical Sciences	None
Biotechnology	One year of physics
Chemistry	One year of biology
Computational mathematics	†
Diagnostic medical sonography	One year of organic chemistry and an additional quarter of mathematics
Environmental science	One year of organic chemistry
Imaging science	†
Physician assistant	One year of physics, one year of organic chemistry, and an additional quarter of mathematics
Physics	One year of biology and one year of organic chemistry
Polymer chemistry	One year of biology

\* 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 take the form of volunteer activities, internships, shadowing practitioners in the field, or actual employment in a health care setting.

### General science exploration option

[www.rit.edu/cos/uds/main.html](http://www.rit.edu/cos/uds/main.html)

Many high school students are interested in the sciences, but undecided as to which program best meets their interests and career goals. The general science exploration program allows students to explore their options before deciding on a program of study.

A customized schedule of courses in science and mathematics is developed for each student based on the student's ability, interests, and goals. A team of academic advisers, representing each department in the college, assists the student in selecting courses and identifying a major in which to enroll. In addition to the traditional science options of biology, chemistry, physics, and math, a student may explore courses in environmental science, imaging science, or the medical sciences.

Before the end of the first year, most students are ready to choose a major. Some students find the decision is easily made after only a quarter of course work. Others are still deciding in their second year and may find that choosing a major and a minor is the best path for them. With proper advising, students 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

	Qtr.	Cr.	Hrs.
<i>First Year</i>			
Freshman Seminar			2
Mathematics or calculus sequence			10-12
<i>Choice of two laboratory sciences:</i>			
Biology			12
Chemistry			13
Physics			8-12
Imaging Science			4
<i>Additional course choices:</i>			
Computer Science			4-8
Liberal Arts*			4-12
First-Year Enrichment			2
Wellness Education†			0
<b>Total Credit Hours (each quarter)</b>			<b>16-18</b>

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

Larry Buckley, Interim Head

## Biomedical Sciences

[www.rit.edu/cos/biology](http://www.rit.edu/cos/biology)

Biomedical sciences is an academic program designed to prepare students for advanced study in medical, dental, veterinary, or graduate schools as they pursue careers in health care or biomedical research. Faculty from across the basic science disciplines, 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.

### 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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Symposium 1001-200	1
General Biology 1001-201, 202, 203	9
General Biology Lab 1001-205, 206, 207	3
General and Analytical Chemistry I, II, III 1011-215, 216, 217	10
Chemistry Principles I, II Lab 1011-205, 206	2
General and Analytical Chemistry III Lab 1011-227	1
Elementary Calculus I, II 1016-214, 215	6
Wellness Education†	0
Liberal Arts*	12
First-Year Enrichment 1105-051, 052	2
<b>Second Year</b>	
Cell Biology 1001-311	4
Molecular Biology 1001-350	4
Anatomy and Physiology I, II 1026-350, 360	10
Organic Chemistry I, II, III 1013-231, 232, 233	9
Organic Chemistry I, II, III Lab 1013-235, 236, 237	3
Data Analysis I 1016-319	4
Science/Track Elective	4
Liberal Arts*	12
<b>Third Year</b>	
College Physics I, II, III 1017-211, 212, 213	12
Science/Track Electives	16
University-wide Electives	2-4
Liberal Arts*	12
<b>Fourth Year</b>	
Science/Track Electives	24
University-wide Electives	17
<b>Total Quarter Credit Hours</b>	<b>180-182</b>

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

† Please see Wellness Education Requirement for more information.

### Program Concentrations

- Forensic science
- Pre-health professions
- Exercise science
- Pathology
- Genetics
- Neuroscience

### Sampling of 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
Radiation Effects on the Human Body	Evolutionary Biology

\*Variable credit; requires at least two sequential quarters of participation

## Biological Sciences

www.biology.rit.edu/

### Biology

The department of biological sciences offers programs leading to the AS and BS degrees in biology. Graduates find 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 to enter 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.

#### 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.

#### Accelerated dual degree option

Students interested in pursuing an MBA degree in addition to a bachelor's degree in biology may consider the accelerated dual degree option. With proper scheduling of courses, biology majors can earn an MBA in one additional year of study. This biology BS/MBA combination prepares students to enter rewarding management positions in a wide range of scientific organizations.

#### 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 but may need to extend the date of graduation beyond the traditional four years.

#### Biology, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Symposium 1001-200	1
Introduction to Biology I, II, III 1001-251, 252, 253	12
General and Analytical Chemistry I, II, III 1011-215, 216, 217	10
Chemical Principles Lab I, II 1011-205, 206	2
General and Analytical Chemistry Lab 1011-227	1
Elementary Calculus I, II 1016-214, 215	6
Liberal Arts*	12
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0

<b>Second Year</b>	
Cell Biology 1001-311	4
Molecular Biology 1001-350	4
Evolutionary Biology 1001-365	4
Organic Chemistry I, II, III 1013-231, 232, 233	9
Organic Chemistry Lab I, II, III 1013-235, 236, 237	3
Data Analysis I 1016-319	4
Biology Elective‡	4
Liberal Arts*	12

<b>Third/Fourth Years§</b>	
General Ecology 1001-340	4
Comparative Physiology 1001-413	4
Genetics 1001-421	4
Developmental Biology 1001-422	4
Biology Seminar 1001-550	2
College Physics I, II, III 1017-211, 212, 213	12
Biology Electives‡	20
Liberal Arts*	12
General Education Courses	7
University-wide Electives	21
Cooperative Education 1001-499 (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 credits must be 400-level or above.

§ If a student elects to participate in our optional 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.

### Biotechnology

The BS program in biotechnology prepares students to immediately assume challenging positions in research, development, and management in biomedical research. Students are also well-prepared for positions in the fields of human genetics, agriculture, food products, pharmaceuticals and vaccine development, environment and energy, forensic science, and genetic counseling.

The advanced nature of the junior- and senior-year courses and the opportunity to participate in faculty-sponsored undergraduate research provide 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, 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.

#### Accelerated dual degree option

Students interested in pursuing an MBA degree in addition to a bachelor's degree in biotechnology may consider the accelerated dual degree option. With proper scheduling of courses, biotechnology majors can earn an MBA in one additional year of study. This combination prepares students to enter rewarding management positions in a wide range of scientific organizations.

#### Requirements for the BS degree in 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

The biotechnology degree provides students the option of participating in our cooperative education program. 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 but may need to extend the date of graduation beyond the traditional four years.

### Biotechnology, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Symposium 1001-200	1
Introduction to Biology I, II, III 1001-251, 252, 253	12
General and Analytical Chemistry I, II, III 1011-215, 216, 217	10
Chemical Principles Lab I, II 1011-205, 206	2
General and Analytical Chemistry Lab 1011-227	1
Elementary Calculus I, II 1016-214, 215	6
Liberal Arts*	12
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Cell Biology 1001-311	4
Immunology 1001-312	3
Tissue Culture 1001-314	5
Molecular Biology 1001-350	4
Organic Chemistry I, II, III 1013-231, 232, 233	9
Organic Chemistry Lab I, II, III 1013-235, 236, 237	3
Data Analysis I 1016-319	4
Liberal Arts*	12
<b>Third and Fourth Years‡</b>	
Introductory Microbiology 1001-404	5
Genetics 1001-421	4
Analytical Chemistry: Separations 1008-312	3
Analytical Chemistry: Separations Lab 1008-319	1
Biochemistry: Conformation and Dynamics 1009-502	3
Biochemistry: Metabolism 1009-503	3
Biotechnology Electives	24
Liberal Arts*	12
General Education Courses	9
University-wide Electives	26
Cooperative Education 1001-499 (optional)‡	Co-op
<b>Total Quarter Credit Hours</b>	<b>180</b>

\* 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.

### Biotechnology, bioinformatics option, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Symposium 1001-200	1
Introduction to Biology I, II, III 1001-251, 252, 253	12
General and Analytical Chemistry I, II, III 1011-215, 216, 217	10
Chemical Principles Lab I, II 1011-205, 206	2
General and Analytical Chemistry Lab 1011-227	1
Computer Science 1, 2 4003-231, 232	8
Liberal Arts*	12
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Elementary Calculus I, II 1016-214, 215	6
Cell Biology 1001-311	4
Molecular Biology 1001-350	4
Immunology 1001-312	3
Tissue Culture 1001-314	5
Computer Science 3 4003-233	4
Organic Chemistry Lecture I, II, III 1013-231, 232, 233	9
Organic Chemistry Lab I, II, III 1013-235, 236, 237	3
Liberal Arts*	8

<b>Third and Fourth Years‡</b>	
Introduction to Microbiology 1001-404	5
Genetics 1001-421	4
Genomics 1001-492	4
Bioinformatics 1001-493	4
Genetic Engineering 1001-450	5
Biotechnology Electives	12
Analytical Chemical Separations 1008-312, 319	4
Biochemistry: Confirmation and Dynamics 1009-502	3
Biochemistry: Metabolism 1009-503	3
Introduction to Databases and Data Modeling 4002-360	4
Computer Science 4 4003-334	4
Data Analysis 1016-319	4
Liberal Arts*	16
University-wide Electives	12
Cooperative Education 1001-499 (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

### Gary Skuse, Program Director

[www.bioinformatics.rit.edu/](http://www.bioinformatics.rit.edu/)

The BS program in bioinformatics represents a truly interdisciplinary degree. The 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 curriculum was designed with the needs of the prospective employers in this challenging and rapidly changing field in mind.

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.

### 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 any 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 but may need to extend the date of graduation beyond the traditional four years.

## Accelerated dual degree option

The existing 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 and a GPA in their professional field of study of at least 3.4 may apply to the bioinformatics committee for entry before the completion of their third year of study. Students in the combined option will be required to take graduate-level courses during their fourth year and complete an approved MS thesis during their final year of study. Those who select this option will complete the undergraduate degree requirements and the 50 quarter credit hours required for the bioinformatics MS degree.

### Bioinformatics, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Symposium 1001-200	1
Introduction to Biology I, II, III 1001-251, 252, 253	12
Unix Under the Hood 1001-265	2
Introduction to Bioinformatics 1001-260	2
Computer Science 1, 2 4003-231, 232	8
Calculus I, II 1016-281, 282	8
Liberal Arts*	12
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Cell Biology 1001-311	4
Molecular Biology 1001-350	4
Bioinformatics 1001-493	4
Computer Science 3 4003-233	4
General and Analytical Chemistry I, II 1011-215, 216	7
Chemical Principles Lab I, II 1011-205, 206	2
Discrete Math I, II 1016-265, 366	8
Data Analysis 1016-319	4
Liberal Arts*	12

<b>Third and Fourth Years</b>	
Introduction to Microbiology 1001-404	5
Introduction to Bioinformatics Computing 4002-462	4
Genetic Engineering 1001-450	5
Genetics 1001-421	4
Genomics 1001-492	4
Molecular Modeling and Proteomics 1001-494	4
Advanced Bioinformatics Computing 4002-563	4
Parallel Computing I 4003-531	4
Biochemistry: Conformation and Dynamics 1009-502	3
Organic Chemistry I 1013-231	3
Organic Chemistry Lab I 1013-235	1
Biochemistry: Metabolism 1009-503	3
Introduction to Databases and Data Modeling 4002-360	4
Data Analysis 1016-319	4
Computer Science 4 4003-334	4
Statistical Analysis for Bioinformatics 1016-415	4
Liberal Arts*	12
University-wide Electives	20
Cooperative Education (required) 1001-499	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.

### Bioinformatics, BS/MS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Symposium 1001-200	1
Introduction to Biology I, II, III 1001-251, 252, 253	12
Unix Under the Hood 1001-265	2
Introduction to Bioinformatics 1001-260	2
Computer Science 1, 2 4003-231, 232	8
Calculus I, II 1016-281, 282	8
Liberal Arts*	16
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0

<b>Second Year</b>	
Cell Biology 1001-311	4
Molecular Biology 1001-350	4
Bioinformatics 1001-493	4
Computer Science 3 4003-233	4
General and Analytical Chemistry I, II 1011-215, 216	7
Chemical Principles Lab I, II 1011-205, 206	2
Discrete Math I, II 1016-265, 366	8
Data Analysis 1016-319	4
Liberal Arts*	8
University-wide Elective	4

<b>Third Year</b>	
Introduction to Microbiology 1001-404	5
Introduction to Bioinformatics Computing 4002-462	4
Genetic Engineering 1001-450	5
Advanced Bioinformatics Computing 4002-563	4
Introduction to Databases and Data Modeling 4002-360	4
Organic Chemistry I 1013-231	3
Organic Chemistry I Lab 1013-235	1
Statistical Analysis for Bioinformatics 1016-415	4
Computer Science 4 4003-334	4
Liberal Arts*	8
University-wide Electives	8
Cooperative Education (required) 1001-499	Co-op

<b>Fourth Year</b>	
Genetics 1001-421	4
Genomics 1001-492	4
Ethics in Bioinformatics 1001-725	3
Molecular Modeling and Proteomics 1001-494	4
Parallel Computing I 4003-531	4
Biochemistry I, II, III 1009-702, 703, 704	9
Liberal Arts*	4
University-wide Electives	7

<b>Fifth Year</b>	
Advanced Database Topics 1001-759	2
Bioinformatics Seminar 1001-722	2
Thesis 1001-890	10
Graduate Electives**	20

**Total Quarter Credit Hours** 225

\* 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.

## Environmental Science

### Karl Korfmacher, Program Director

[www.rit.edu/cos/environmental/](http://www.rit.edu/cos/environmental/)

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.

### 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 in which he or she will specialize. Students in the BS program are required to complete a minimum of 20 quarter credit hours in a specified concentration. Assistance in selecting an appropriate concentration can be obtained from the program director. 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.

## 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 in an interdisciplinary problem-solving team. Upon graduation, students will be valued for their broad understanding of environmental science, their depth of knowledge in a particular aspect of environmental science, and their ability to attack and solve tough environmental problems.

## Requirements for the BS degree

Students must meet the minimum requirements of the university as described in this bulletin. In addition, the program requires successful completion of all of the courses listed in the typical course schedule below.

### Environmental science, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Symposium 1001-200	1
Introduction to Biology I, II, III 1001-251, 252, 253	12
General and Analytic Chemistry I, II 1011-215, 216	7
Chemistry Principles I, II Labs 1011-205, 206	2
<i>Choose one of the following math sequences:</i>	
Elementary Calculus I, II 1016-214, 215	6
Project-Based Calculus I, II, III 1016-281, 282, 283	12
Environment and Society 0508-460	4
Concepts in Environmental Science 1006-202	4
Environmental Science Field Studies 1006-203	4
Liberal Arts*	4
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Applications of GIS 1006-350	4
Fundamentals of Organic Chemistry 1011-202	3
Introduction to Organic Chemistry Lab 1011-207	1
<i>Choose one of the following physics sequences:</i>	
College Physics 1017-211, 212, 213	12
University Physics 1017-311, 312, 313	12
Data Analysis I, II 1016-319, 320	10
Environmental Geology and Lab 0630-370, 372	4
Liberal Arts*	12
<b>Third Year</b>	
General Ecology 1001-340	4
Conservation Biology 1001-475	4
Capstone in Environmental Science 1006-503	4
Great Lakes I, II 0508-463, 464	8
Introduction to Hydrology and Lab 0630-380, 382	4
Environmental Science Concentration§	8
Liberal Arts*	12
General Education Elective**	0-4

<b>Fourth Year</b>	Environmental Applications of Remote Sensing 1051-420	4
	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.

## 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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Freshman Symposium 1001-200	1
Introduction to Biology I, II, III 1001-251, 252, 253	12
General and Analytic Chemistry I, II 1011-215, 216	7
Chemistry Principles Labs I, II 1011-205, 206	2
<i>Choose one of the following math sequences:</i>	
Elementary Calculus I, II 1016-214, 215	6
Project-Based Calculus I, II, III 1016-281, 282, 283	12
Environment and Society 0508-460	4
Concepts in Environmental Science 1006-202	4
Environmental Science Field Studies 1006-203	4
Liberal Arts*	4
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
<b>Second Year</b>	
Applications of GIS 1006-350	4
Fundamentals of Organic Chemistry 1011-202	3
Introduction to Organic Chemistry Lab 1011-207	1
<i>Choose one of the following physics sequences:</i>	
College Physics 1017-211, 212, 213	12
University Physics 1017-311, 312, 313	12
Data Analysis I, II 1016-319, 320	10
Environmental Geology and Lab 0630-370, 372	4
Liberal Arts*	12
<b>Third Year</b>	
General Ecology 1001-340	4
Conservation Biology 1001-475	4
Capstone in Environmental Science 1006-503	4
Great Lakes I, II 0508-463, 464	8
Introduction to Hydrology and Lab 0630-380, 382	4
Environmental Science Concentration§	8
Liberal Arts*	12
General Education Elective**	0-4

<b>Fourth Year</b>	Environmental Science Graduate Study I, II, III 1006-711, 712, 713	5
	Environmental Science Graduate Research 1006-879	3
	Graduate Readings Seminar 1006-710	3
	Environmental Chemistry 1015-720	3
	Environmental Applications of Remote Sensing 1051-420	4
	Environmental Science Concentration§	4
	University-wide Electives (undergraduate)	12
Liberal Arts*	8	
<b>Fifth Year</b>	Thesis/Project 1006-890/891	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	
<b>Total Quarter Credit Hours</b>		<b>233-236</b>

\* 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.

## Medical Sciences

[www.rit.edu/cos/medical](http://www.rit.edu/cos/medical)

The department of medical sciences includes the physician assistant and diagnostic medical sonography (ultrasound) programs. Both are designed to prepare students for entry into careers in the health sciences. Graduates find employment opportunities in hospitals, clinics, and research facilities within industry and with many governmental agencies. Some continue their education in graduate and professional schools. The BS programs offered by the department can serve as preprofessional programs for schools of medicine, veterinary medicine, or dentistry.

In addition to the BS programs, there are certificate options in diagnostic medical sonography and exercise science as well as an MS degree program in clinical chemistry.

## Physician Assistant

**Heidi Miller, Program Director**

[http://www.rit.edu/cos/medical/physician\\_assistant.html](http://www.rit.edu/cos/medical/physician_assistant.html)

The physician assistant program focuses on primary care and awards a bachelor of science degree upon completion. The pre-professional phase (years 1 and 2) involves core courses in basic sciences, mathematics, and the liberal arts. The professional phase (years 3 and 4) is fully accredited by the Accreditation Review Commission for the Physician Assistant, Inc. (ARC-PA) and encompasses 21 months. Students participate in the program during the summer between these years. The last two years of the program include nine months of clinical course work and 12 months of clinical rotations. Qualified transfer students are accepted into any one of the first three years of 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 PA program.

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 during students' senior year provide the opportunity to explore these specialty areas.

In addition to RIT's general admission procedures, the physician assistant program requires 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 at (585) 475-6631. 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.

## 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 and 4) of the physician assistant program is fully accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA).

### Physician assistant, BS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
General Biology 1001-201, 202, 203	9
General Biology Lab 1001-205, 206, 207	3
Calculus for Management Science 1016-226	4
General and Analytical Chemistry I, II, III 1011-215, 216, 217	10
Chemical Principles I, II Lab 1011-205, 206	2
General and Analytical Chemistry III Lab 1011-227	1
Liberal Arts*	16
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0



<b>Second Year (Pre-professional)</b>	Anatomy and Physiology 1026-350, 360	10
	Data Analysis I 1016-319	4
	Medical Microbiology 1032-406	4
	University-wide Electives	12
	Liberal Arts*	20
<b>Third Year (Professional)</b>	Pathophysiology I, II 1032- 424, 425	8
	Law and Medicine 1032-330	2
	Physician Assistant Seminar 1032-210	1
	Society and Patient Care 1032-559	3
	Behavioral Medicine 1032-200	2
	Patient History and Physical Exam I, II, III 1032-401, 402, 403	6
	Clinical Skills 1032-410	1
	Clinical Pharmacology I, II, III 1032-420, 421, 422	8
	Clinical Diagnostic Imaging 1032-430	1
	Clinical Medicine I, II, III 1032-440, 441, 442	12
	Clinical Rotation I 1032-490	12
<b>Fourth Year (Professional)</b>	Clinical Rotation II, III, IV 1032-491, 492, 493†	36
<b>Total Quarter Credit Hours</b>		<b>189</b>

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

† Please see Wellness Education Requirement for more information.

‡ Fourth-year clinical rotations are completed at various hospitals and ambulatory health care settings approved for training physician assistants.

## Diagnostic Medical Sonography (Ultrasound)

**Hamad Ghazle, Program Director**

[www.rit.edu/cos/medical/diagnostic\\_medical.html](http://www.rit.edu/cos/medical/diagnostic_medical.html)

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.

RIT's 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.

### Requirements for the BS degree in general ultrasound

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. Associate degree holders may be able to complete a BS degree in two years; additional course work may be required. Contact the program director for further information on BS degree requirements.

### Requirements for the certificate option

The certificate option is a one-year course of study that includes lectures integrated with the 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.

### 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**

		Qtr. Cr. Hrs.	
<b>First Year</b>	General Biology 1001-201, 202, 203	9	
	General Biology Lab 1001-205, 206, 207	3	
	General and Analytical Chemistry 1011-215, 216, 217	10	
	Chemistry I, II, III Labs 1011-205, 206, 207	3	
	Computers in Medicine 4006-230	4	
	Calculus for Management Science 1016-226	4	
	Liberal Arts*	12	
	First-Year Enrichment 1105-051, 052	2	
	Wellness Education†	0	
	<hr/>		
<b>Second Year</b>	College Physics 1017-211, 212, 213	9	
	College Physics Lab 1017-271, 272, 273	3	
	Introduction to Diagnostic Medical Imaging 1026-205	2	
	Medical Terminology 1026-301	3	
	Anatomy and Physiology 1026-350, 360	10	
	Data Analysis I 1016-319	4	
	Liberal Arts*	12	
<hr/>			
<b>Third Year</b>	Cross-Sectional Anatomy 1030-412	4	
	Ultrasound Instrumentation I, II 1030-409, 410	8	
	Pathophysiology 1026-415	4	
	Medical Genetics 1004-315	2	
	Patient Care 1026-333	2	
	Ultrasound Scanning 1030-559	4-6	
	University-wide Electives	12	
	Liberal Arts*	12	
<hr/>			
<b>Fourth Year (Internship)</b>	Introduction to Obstetrical Ultrasound 1030-552	3	
	Gynecologic Ultrasound 1030-553	3	
	Abdominal Ultrasound I 1030-556	3	
	Clinical Ultrasound I 1030-570	7	
	Advanced Obstetrical Ultrasound 1030-554	4	
	Abdominal Ultrasound II 1030-557	3	
	Ultrasound Seminar 1030-560	2	
	Clinical Ultrasound II 1030-571	7	
	Small Parts Ultrasound 1030-558	3	
	General Vascular Evaluation 1030-414	4	
	Research Seminar 1030-561	2	
	Clinical Ultrasound III 1030-572	7	
	<b>Total Quarter Credit Hours</b>		<b>184-186</b>

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

**Diagnostic medical sonography certificate program, typical course sequence**  
**Must be completed before entering clinical internship\***

		Qtr. Cr. Hrs.
	Introduction to Diagnostic Medical Imaging 1026-205	2
	Cross-Sectional Anatomy 1030-412	4
	Ultrasound Instrumentation I, II 1030-409, 410	8
	Pathophysiology 1026-415	4
	Ultrasound Scanning 1030-559	4-6
<hr/>		
<b>Internship</b>	Introduction to Obstetrical Ultrasound 1030-552	3
	Gynecologic Ultrasound 1030-553	3
	Abdominal Ultrasound I 1030-556	3
	Clinical Ultrasound I 1030-570	7
	Advanced Obstetrical Ultrasound 1030-554	4
	Abdominal Ultrasound II 1030-557	3
	Ultrasound Seminar 1030-560	2
	Clinical Ultrasound II 1030-571	7
	Small Parts Ultrasound 1030-558	3
	General Vascular Evaluation 1030-414	4
	Research Seminar 1030-561	2
	Clinical Ultrasound III 1030-572	7
<b>Total Quarter Credit Hours</b>		<b>70-72</b>

\* Other prerequisite courses may apply.

**Exercise Science**

**William Brewer, Program Director**

[www.rit.edu/cos/medical/exercise\\_science.html](http://www.rit.edu/cos/medical/exercise_science.html)

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.

**Exercise science, certificate program, typical course sequence**

	Qtr. Cr. Hrs.
1026-305 Sports Physiology and Life Fitness	4
1026-306 Fitness Prescription and Programming	4
<i>Choose one of the following courses:</i>	
1026-307 Exercise Prescription for Special Populations	4
0620-300 Sports Nutrition	4
<b>Quarter Credit Hours Total</b>	<b>12</b>

**School of Mathematical Sciences**

**Douglas Meadows, Interim Head**

[www.math.rit.edu](http://www.math.rit.edu)

Over the past several years a growing demand has developed for mathematicians and statisticians with broad-based quantitative backgrounds and extensive computer skills. Mathematical and statistical theory is the basis for many fields of practical application, and employers need people whose education merges mathematics with another field of study—computer science, statistics, chemistry, physics, engineering, or business, to name a few.

The School of Mathematical Sciences has established three BS degree programs in response to these long-term industry needs: applied mathematics, applied statistics, and computational mathematics. Each has been carefully designed to meet the needs of both students and their potential employers. Constant feedback from industry has enabled the school to update its courses, programs, and equipment in order to make sure students are well-trained in current techniques, technology, and applications. Students utilize symbolic computation software in many of their courses. Our specially equipped classrooms for multimedia

presentations and symbolic computation, as well as our statistics labs, lend support to all of our programs. Industrial needs and trends are carefully discussed with employers in order to update the curricula, and graduates find that their RIT backgrounds are tailor-made for their professional careers.

Many exciting career opportunities exist for mathematics majors. Students typically become involved in research or consulting or use computers for statistical analysis or analysis of complex mathematically modeled physical problems. Examples of co-op placements and permanent jobs typically obtained by mathematics and statistics majors include the following: actuary, analyst for mathematical modeling, statistician, mathematical statistician, demographics analyst, software designer, scientific programmer, systems analyst, cryptographic mathematician, manufacturing engineering consultant, biological systems analyst, computer modeling consultant, graphic modeling consultant, simulations programmer, reliability analyst, statistical forecaster, robotics software specialist, database programmer, data analyst, telecommunications analyst, software engineer, marketing analyst, and aerospace systems analyst.

Students in all three programs enjoy small classes and opportunities to get to know their professors outside the classroom. Job prospects for graduates are plentiful, and the school is proud of its outstanding record of placing students in both co-op and permanent jobs.

### Accelerated dual degree options

Each of the three BS degree programs has a complementary master's degree program that can be completed in one additional year. Students in all three BS programs are eligible for the combined BS/MS in applied and computational mathematics.

### Minors

Students at RIT may choose to pursue a minor in mathematics or statistics to complement their primary area of interest. Please refer to the Minors section of this bulletin for more information.

### Actuarial studies

A plan of study has been designed for students seeking 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.

### Requirements for the BS degree

Students must meet the minimum requirements of the university as described in this bulletin. In addition, they must complete the requirements contained in one of the particular programs listed here or its equivalent, as determined and approved by the School of Mathematical Sciences. In conjunction with a faculty adviser, individual student programs may be established to meet particular needs, interests, and goals.

## Applied Mathematics

The applied mathematics program focuses on the study and solution of problems that can be mathematically analyzed. Industry has 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, and business 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.

### Applied mathematics, BS degree, typical course sequence

		Qtr. Cr. Hrs.	
<b>First Year</b>	Mathematics and Statistics Seminar 1016-210, 211	2	
	Project-Based Calculus I, II, III 1016-281, 282, 283	12	
	Discrete Math I 1016-265	4	
	Science Electives	12	
	Liberal Arts*	16	
	Technical Writing 0502-444	4	
	First-Year Enrichment 1105-051, 052	2	
Wellness Education†	0		
<b>Second Year</b>	Multivariable Calculus 1016-305	4	
	Differential Equations I 1016-306	4	
	Probability 1016-351	4	
	Applied Statistics 1016-352	4	
	Cooperative Education Seminar 1016-399	0	
	Mathematics Elective	4	
	Linear Algebra I 1016-331	4	
	Liberal Arts*	8	
	<i>Choose one of the following computer science options:</i>		
	Computer Science Option 1 4001-211 and 4003-231	8	
	Computer Science Option 2 4003-231 and 4003-232	8	
	Vector Calculus 1016-410	4	
University-wide Electives	10		
<b>Third Year</b>	<i>Choose one of the following courses:</i>		
	Numerical Analysis 1016-511	4	
	Numerical Linear Algebra 1016-512	4	
	Linear Algebra II 1016-432	4	
	Mathematical Modeling 1016-461	4	
	Mathematics Electives	8	
	Liberal Arts*	12	
General Education Electives	8-12		
Cooperative Education 1016-499 (optional)	Co-op		
<b>Fourth Year</b>	Real Variables I, II 1016-411, 412	8	
	Mathematics Electives	4	
	Application Area	4	
	General Education Electives	10	
	Cooperative Education 1016-499 (optional)	Co-op	
<b>Fifth Year‡</b>	Abstract Algebra I, II 1016-531, 532	8	
	Application Area	8	
	Cooperative Education 1016-499 (optional)	Co-op	
<b>Total Quarter Credit Hours</b>		<b>188</b>	

\* 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 co-op option is omitted.

## Applied Statistics

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 effectively and solved using statistical methodology.

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.

### Applied statistics, BS degree, typical course sequence

		Qtr. Cr. Hrs.	
<b>First Year</b>	Mathematics and Statistics Seminar 1016-210, 211	2	
	Project-Based Calculus I, II, III 1016-281, 282, 283	12	
	Discrete Math I 1016-265	4	
	Statistical Computing with Excel and Minitab 1016-260	2	
	Science Electives	12	
	University-wide Electives	2	
	Liberal Arts*	8	
	Technical Writing 0502-444	4	
	First-Year Enrichment 1105-051, 052	2	
	Wellness Education†	0	
<b>Second Year</b>	Multivariable Calculus 1016-305	4	
	Differential Equations 1016-306	4	
	Probability 1016-351	4	
	Applied Statistics 1016-352	4	
	Co-op Seminar 1016-399	0	
	Mathematics Elective‡	4	
	Statistical Computing 0307-442	4	
	Linear Algebra I 1016-331	4	
	Computer Science Option 4001-211 or 4003-231	4	
	<i>Choose one of the following courses:</i>		
	Statistical Quality Control 1016-358	4	
	Research Sampling Techniques 1016-457	4	
	Liberal Arts*	16	
<b>Third Year</b>	Linear Algebra II 1016-432	4	
	Regression Analysis 1016-354	4	
	Design of Experiments 1016-355	4	
	Mathematics Elective‡	4	
	Liberal Arts*	8	
	General Education Electives	8	
Cooperative Education 1016-499 (optional)	Co-op		
<b>Fourth Year</b>	Nonparametric Statistics 1016-454	4	
	Mathematics Electives‡	12	
	University-wide Electives	6	
	General Education Electives	6	
	Liberal Arts*	4	
Cooperative Education 1016-499 (optional)	Co-op		
<b>Fifth Year§</b>	Mathematical Statistics I, II 1016-451, 452	8	
	Statistics Seminar 1016-555	4	
	Mathematics Elective‡	4	
	General Education Electives	8-12	
	Cooperative Education 1016-499 (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 co-op 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 students 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

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.

### Computational mathematics, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Mathematics and Statistics Seminar 1016-210, 211	2
	Project-Based Calculus I, II, III 1016-281, 282, 283	12
	Discrete Math I 1016-265	4
	Computer Science 1 4003-231	4
	Computer Science 2 4003-232	4
	Computer Science 3 4003-233	4
	Science Electives	12
	Liberal Arts*	8
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
<b>Second Year</b>	Multivariable Calculus 1016-305	4
	Differential Equations I 1016-306	4
	Probability 1016-351	4
	Applied Statistics 1016-352	4
	Co-op Seminar 1016-399	0
	Linear Algebra I 1016-331	4
	Computer Science 4 4003-334	4
	Software Engineering 3010-361	4
	Technical Writing 0502-444	4
	Computational Math Concentration	4
	University-wide Elective	4
	Liberal Arts*	12
	<b>Third Year</b>	Linear Algebra II 1016-432
Graph Theory 1016-467		4
Mathematical Modeling 1016-461		4
Computational Math Concentration		8
University-wide Elective		4
Liberal Arts*		4
Cooperative Education 1016-499 (optional)	Co-op	
<b>Fourth Year</b>	Real Variables I 1016-411	4
	Numerical Analysis 1016-511	4
	Numerical Linear Algebra 1016-512	4
	Computational Math Concentration	4
	University-wide Elective	2
	General Education Electives	8
	Liberal Arts*	12
Cooperative Education 1016-499 (optional)	Co-op	
<b>Fifth Year‡</b>	Abstract Algebra I, II 1016-531, 532	8
	Computational Math Concentration	4
	General Education Electives	6
	Cooperative Education 1016-499 (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 co-op 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/](http://www.rit.edu/cos/chemistry/)

The department of chemistry offers programs leading to the AS and BS degrees in chemistry, a BS degree in chemistry with an environmental chemistry option, 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 in chemistry with an environmental chemistry option/MS chemistry, BS biochemistry/MS chemistry, BS polymer chemistry/MS chemistry, and a BS chemistry/MS materials science and engineering.

### Requirements for the BS degree

Students must meet the minimum graduation requirements of the university, as described in this bulletin. In addition, they must complete particular program requirements or the equivalent, as determined and approved by the department of chemistry.

To meet the requirements leading to the BS degrees in chemistry, chemistry with an environmental chemistry option, biochemistry, and polymer chemistry—all of which are approved by the Committee on Professional Training of the American Chemical Society—students must take specifically designated courses in chemistry and related sciences.

All students also must meet the requirements for the university's writing policy, as specified by the department of chemistry.

### Extended-day and part-time studies in chemistry

All BS degree options in chemistry, biochemistry, and polymer chemistry are designed to accommodate part-time students, beyond the associate degree, during day or evening hours. Also, the American Chemical Society-approved chemistry degrees are offered at extended-day hours. Academic advising is available throughout.

The chemistry department also offers a generous array of both general chemistry and biochemistry courses in a distance learning format. These courses include all lectures available on electronic media and contact with the instructor by computer. In some cases the course is augmented by a Web page. This mode of presentation allows for complete schedule flexibility. For available online courses, please consult the quarterly schedule or RIT's online learning website at <http://online.rit.edu/>.

## Accelerated dual degree options

The BS chemistry programs 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 the combined programs 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.

## Chemistry

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.

### Chemistry (ACS certified), BS degree, typical course sequence

	Qtr.	Cr. Hrs.
<i>First Year</i>		
Chemical Safety 1010-200		1
Introduction to Co-op and Chemical Careers 1010-230		1
General Chemistry I, II 1010-251, 252		7
General Chemistry I Lab 1010-255		1
Quantitative Analysis I, II 1008-261, 262		7
Quantitative Analysis Lab I, II 1008-265, 266		3
Calculus I, II, III 1016-281, 282, 283		12
Liberal Arts*		16
First-Year Enrichment 1105-051, 052		2
Wellness Education†		0
Cooperative Education 1010-499 (optional, summer)	Co-op	

<b>Second Year</b>	Instrumental Analysis 1008-311	3
	Instrumental Analysis Lab 1008-318	1
	Separations Techniques 1008-312	3
	Separations Techniques Lab 1008-319	1
	Multivariable Calculus 1016-305	4
	Organic Chemistry I, II, III 1013-431, 432, 433	9
	Preparative Organic Chemistry Lab I, II 1013-435, 436	2
	Systematic ID of Organic Compounds III Lab 1013-437	2
	Liberal Arts*	8
Cooperative Education 1010-499 (optional)	Co-op	

<b>Third Year</b>	Differential Equations 1016-306	4
	University Physics I, II, III 1017-311, 312, 313	12
	Chemical Thermodynamics 1014-441	4
	Chemical Thermodynamics Lab 1014-445	1
	Liberal Arts*§	12
Cooperative Education 1010-499 (optional)	Co-op	

<b>Fourth Year</b>	Quantum Chemistry 1014-442	4
	Quantum Chemistry Lab 1014-446	1
	Chemical Kinetics 1014-443	4
	Chemical Kinetics Lab 1014-447	1
	Chemical Literature 1010-401	2
	Inorganic Chemistry I, II 1012-562, 563#	8
	Biochemistry 1009-502#	3
	University-wide Electives‡	
Cooperative Education 1010-499 (optional)	Co-op	

<b>Fifth Year</b>	Preparative Inorganic Chemistry Lab 1012-565#	3
	Advanced Instrumental Analysis 1008-511#	3
	Advanced Instrumental Analysis Lab 1008-621#	2
	Chemistry Electives§	
	University-wide Electives‡	
Cooperative Education 1010-499 (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

### Chemistry, combined BS/MS degree, typical course sequence

	Qtr. Cr. Hrs.	
<b>First Year</b>	Chemical Safety 1010-200	1
	Introduction to Co-op and Chemical Careers 1010-230	1
	General Chemistry I, II 1010-251, 252	7
	General Chemistry I Lab 1010-255	1
	Quantitative Analysis I, II 1008-261, 262	7
	Quantitative Analysis Lab I, II 1008-265, 266	3
	Calculus I, II, III 1016-281, 282, 283	12
	Liberal Arts*	16
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Cooperative Education 1010-499 (optional, summer)	Co-op	

<b>Second Year</b>	Instrumental Analysis 1008-311	3
	Instrumental Analysis Lab 1008-318	1
	Separations Techniques 1008-312	3
	Separations Techniques Lab 1008-319	1
	Multivariable Calculus 1016-305	4
	Differential Equations 1016-306	4
	Organic Chemistry I, II, III 1013-431, 432, 433	9
	Preparative Organic Chemistry Lab I, II 1013-435, 436	2
	Systematic ID of Organic Compounds III Lab 1013-437	2
	Liberal Arts*	8
Cooperative Education 1010-499 (optional, summer)	Co-op	

<b>Third Year</b>	Chemical Literature 1010-401	2
	University Physics I, II, III 1017-311, 312, 313	12
	Chemical Thermodynamics 1014-441	4
	Chemical Thermodynamics Lab 1014-445	1
	Liberal Arts*‡	12
	Chemistry Electives§	
Cooperative Education 1010-499 (optional, summer)	Co-op	

<b>Fourth Year</b>	Quantum Chemistry 1014-442	4
	Quantum Chemistry Lab 1014-446	1
	Chemical Kinetics 1014-443	4
	Chemical Kinetics Lab 1014-447	1
	Biochemistry 1009-702#	3
	Advanced Instrumental Analysis 1008-711#	3
	Advanced Instrumental Analysis Lab 1008-621#	2
	Inorganic Chemistry I, II 1012-562, 563#	8
	Preparative Inorganic Chemistry Lab 1012-765#	3
	Chemistry Electives§	
Research and Thesis Guidance 1010-879**	3	

<b>Fifth Year§</b>	Chemistry Seminar 1012-870	2
	Research and Thesis Guidance 1010-879**	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 requirements highly recommend a foreign language (preferably German).

\*\* A student will normally have 9 to 16 credit hours of Research and Thesis Guidance.

§ 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

### Environmental chemistry option (ACS certified)

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

	Qtr. Cr. Hrs.	
<b>First Year</b>	Chemical Safety 1010-200	1
	Introduction to Co-op and Chemical Careers 1010-230	1
	General Chemistry I, II 1010-251, 252	7
	General Chemistry I Lab 1010-255	1
	Quantitative Analysis I, II 1008-261, 262	7
	Quantitative Analysis Lab I, II 1008-265, 266	3
	Calculus I, II, III 1016-281, 282, 283	12
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
General Biology 1001-201	3	
General Biology Lab 1001-205	1	
Cooperative Education 1010-499 (optional, summer)	Co-op	

<b>Second Year</b>	Instrumental Analysis 1008-311	3
	Instrumental Analysis Lab 1008-318	1
	Separations Techniques 1008-312	3
	Separations Techniques Lab 1008-319	1
	Multivariable Calculus 1016-305	4
	Organic Chemistry I, II, III 1013-431, 432, 433	9
	Preparative Organic Chemistry Lab I, II 1013-435, 436	2
	Systematic Identification of Organic Compounds Lab 1013-437	2
	Microbiology in Health and Disease 1004-210	4
	Liberal Arts*	12
Cooperative Education 1010-499 (optional, summer)	Co-op	

<b>Third Year</b>	Liberal Arts*‡	12
	Differential Equations 1016-306	4
	Advanced Instrumental Analysis 1008-511	3
	Advanced Instrumental Analysis Lab 1008-621	2
	University Physics I, II, III 1017-311, 312, 313	12
	Aquatic Toxicology and Chemistry 1015-522	3
	Cooperative Education 1010-499 (optional, summer)	Co-op
<b>Fourth Year</b>	Biochemistry 1009-702	3
	Chemical Thermodynamics 1014-441	4
	Chemical Thermodynamics Lab 1014-445	1
	Quantum Chemistry 1014-442	4
	Quantum Chemistry Lab 1014-446	1
	Chemical Kinetics 1014-443	4
	Chemical Kinetics Lab 1014-447	1
	Environmental Chemistry 1015-720	3
	Inorganic Chemistry I 1012-562	4
	Preparative Inorganic Chemistry Lab 1012-565	3
	Chemistry Electives§‡	
	Research and Thesis Guidance 1010-879#	3
	Chemical Literature 1010-401	2
<b>Fifth Year##</b>	Atmospheric Chemistry 1015-721	3
	Chemistry Seminar 1010-870	2
	Research and Thesis Guidance 1010-879#	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) requirements highly recommend 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.

## Accelerated dual degree 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)

		<b>Qtr. Cr. Hrs.</b>
<b>First Year</b>	Chemical Safety 1010-200	1
	Introduction to Co-op and Chemical Careers 1010-230	1
	General Chemistry I, II 1010-251, 252	7
	General Chemistry I Lab 1010-255	1
	Quantitative Analysis I, II 1008-261, 262	7
	Quantitative Analysis Lab I, II 1008-265, 266	3
	Calculus I, II, III 1016-281, 282, 283	12
	Liberal Arts*	16
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
<b>Second Year</b>	Instrumental Analysis 1008-311	3
	Instrumental Analysis Lab 1008-318	1
	Separations Techniques 1008-312	3
	Separations Techniques Lab 1008-319	1
	Organic Chemistry I 1013-431, 432, 433	9
	Preparative Organic Chemistry Lab I, II 1013-435, 436	2
	Systematic Identification of Organic Compounds Lab 1013-437	2
	Multivariable Calculus 1016-305	4
	Differential Equations 1016-306	4
	University Physics I, II, III 1017-311, 312, 313	12
	Liberal Arts*‡	4
	Cooperative Education 1010-499 (optional, summer)	Co-op

<b>Third Year</b>	Chemical Literature 1010-401	2
	Chemical Thermodynamics 1014-441	4
	Chemical Thermodynamics Lab 1014-445	1
	Quantum Chemistry 1014-442	4
	Quantum Chemistry Lab 1014-446	1
	Chemical Kinetics 1014-443	4
	Chemical Kinetics Lab 1014-447	1
	Liberal Arts*‡	16
	University-wide elective	4
	Cooperative Education 1010-499 (optional, summer)	Co-op

<b>Fourth Year</b>	Advanced Instrumental Analysis 1008-511 (or 711)**	3
	Advanced Instrumental Analysis Lab 1008-621**	2
	Biochemistry: Conformation and Dynamics 1009-502**	3
	Inorganic Chemistry I, II 1012-562, 563**	8
	Preparative Inorganic Chemistry Lab 1012-565**	3
	Advanced Chemistry Electives§	
	Introduction to Materials Science 1028-701	4
	Introduction to Polymer Science 1028-702	4
	Introduction to Experimental Techniques 1028-705	4
	Research and Thesis Guidance 1028-879#	
	Materials Science Electives§	

<b>Fifth Year</b>	Atmospheric Chemistry 1015-721	3
	Solid State Science 1028-703	4
	Introduction to Theoretical Methods 1028-704	4
	Materials Properties and Selection 1028-710	4
	Sensors and Actuators 1028-780	4
	Sensors and Actuators Lab 1028-785	2
	Materials Science Electives§	
	Research and Thesis Guidance 1028-879#	
	Seminar 1028-890	1

**Total Quarter Credit Hours** 225

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

† Please see Wellness Education Requirement for more information.

‡ ACS requirements highly recommend 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.

# A student will be required to have 9 to 16 credit hours of Research and Thesis Guidance (1028-879).

\*\* Required only for ACS certification.

## Biochemistry

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 (300-level or higher) that include laboratory work for the biochemistry major.

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.

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.

### Biochemistry, BS degree, typical course sequence (follows ASBMB guidelines)

	Qtr. Cr. Hrs.
<b>First Year</b>	
Chemical Safety 1010-200	1
Freshman Symposium 1010-230	1
General Chemistry I, II 1010-251, 252	7
General Chemistry I Lab 1010-255	1
Quantitative Analysis I, II 1008-261, 262	7
Quantitative Analysis Lab I, II 1008-265, 266	3
Calculus I, II, III 1016-281, 282, 283	12
General Biology 1001-201, 202, 203	9
General Biology Lab 1001-205, 206, 207	3
Liberal Arts*	4
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
Cooperative Education 1010-499 (optional, summer)	Co-op

<b>Second Year</b>	
Chemical Literature 1010-401	2
Multivariable Calculus 1016-305	4
Organic Chemistry I, II, III 1013-431, 432, 433	9
Preparative Organic Chemistry Lab I, II 1013-435, 436	2
Systematic ID of Organic Compounds III Lab 1013-437	2
Cell Biology 1001-322	4
Molecular Biology 1001-350	4
Biochemistry: Conformation and Dynamics 1009-502	3
Biology Elective	4
Liberal Arts*	12
University-wide Electives‡	
Cooperative Education 1010-499 (optional)	Co-op

<b>Third Year</b>	
Instrumental Analysis 1008-311	3
Instrumental Analysis Lab 1008-318	1
Biochemistry: Metabolism 1009-503	3
Biochemistry: Nucleic Acids 1009-504	3
Biochemistry: Experimental Techniques Lab 1009-505	2
Choose one of the following physics sequences:	
University Physics I, II, III 1017-311, 312, 313	12
College Physics I, II, III 1017-211, 212, 213	12
Biology Elective	4
Liberal Arts*	12
University-wide Electives‡	
Cooperative Education 1010-499 (optional)	Co-op

<b>Fourth Year</b>	
Chemical Thermodynamics 1014-441	4
Chemical Thermodynamics Lab 1014-445	1
Chemical Kinetics 1014-443	4
Chemical Kinetics Lab 1014-447	1
Liberal Arts*	8
University-wide Electives‡	
Cooperative Education 1010-499 (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)

	Qtr. Cr. Hrs.
<b>First Year</b>	
Chemical Safety 1010-200	1
Freshman Symposium 1010-230	1
General Chemistry I, II 1010-251, 252	7
General Chemistry I Lab 1010-255	1
Quantitative Analysis I, II 1008-261, 262	7
Quantitative Analysis Lab I, II 1008-265, 266	3
Calculus I, II, III 1016-281, 282, 283	12
General Biology I, II, III 1001-201, 202, 203	9
General Biology Lab 1001-205, 206, 207	3
Liberal Arts*	4
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
Cooperative Education 1010-499 (optional, summer)	Co-op

<b>Second Year</b>	
Chemical Literature 1010-401	2
Multivariable Calculus 1016-305	4
Differential Equations 1016-306	4
Organic Chemistry I, II, III 1013-431, 432, 433	9
Preparative Organic Chemistry Lab I, II 1013-435, 436	2
Systematic Identification of Organic Compounds III Lab 1013-437	2
Cell Biology 1001-322	4
Molecular Biology 1001-350	4
Biochemistry: Conformation and Dynamics 1009-502	3
Biology Elective	4
Liberal Arts*	8
University-wide Electives‡	
Cooperative Education 1010-499 (optional)	Co-op

<b>Third Year</b>	
Instrumental Analysis 1008-311	3
Instrumental Analysis Lab 1008-318	1
Biochemistry: Metabolism 1009-503	3
Biochemistry: Nucleic Acids 1009-504	3
Biochemistry: Experimental Techniques Lab 1009-505	2
Choose one of the following physics sequences:	
University Physics I, II, III 1017-311, 312, 313	12
College Physics I, II, III 1017-211, 212, 213	12
Biology Elective	4
Liberal Arts*	12
Cooperative Education 1010-499 (optional)	Co-op

<b>Fourth Year</b>	
Chemical Thermodynamics 1014-441	4
Chemical Thermodynamics Lab 1014-445	1
Quantum Chemistry 1014-442	4
Quantum Chemistry Lab 1014-446	1
Chemical Kinetics 1014-443	4
Chemical Kinetics Lab 1014-447	1
Inorganic Chemistry I 1012-562	4
Preparative Inorganic Chemistry Lab 1011-565	3
Liberal Arts*	12
Cooperative Education 1010-499 (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.

### Biochemistry, combined BS/MS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Chemical Safety 1010-200	1
Freshman Symposium 1010-230	1
General Chemistry I, II 1010-251, 252	7
General Chemistry Lab 1010-255	1
Quantitative Analysis I, II 1008-261, 262	7
Quantitative Analysis Lab I, II 1008-265, 266	3
Calculus I, II, III 1016-281, 282, 283	12
General Biology I, II, III 1001-201, 202, 203	9
General Biology Lab 1001-205, 206, 207	3
Liberal Arts*	4
First-Year Enrichment 1105-051, 052	2
Wellness Education†	0
Cooperative Education 1010-499 (optional, summer)	Co-op

<b>Second Year</b>	
Instrumental Analysis 1008-311	3
Instrumental Analysis Lab 1008-318	1
Multivariable Calculus 1016-305	4
Differential Equations 1016-306	4
Organic Chemistry I, II, III 1013-431, 432, 433	9
Preparative Organic Chemistry Lab I, II 1013-435, 436	2
Systematic ID of Organic Compounds III Lab 1013-437	2
University Physics I, II, III 1017-311, 312, 313	12
Liberal Arts*	16
Cooperative Education 1010-499 (optional, summer)	Co-op



<b>Third Year</b>	Chemical Thermodynamics 1014-441	4
	Chemical Thermodynamics Lab 1014-445	1
	Chemical Literature 1010-401	2
	Quantum Chemistry 1014-442	4
	Quantum Chemistry Lab 1014-446	1
	Chemical Kinetics 1014-443	4
	Chemical Kinetics Lab 1014-447	1
	Liberal Arts*	16
	Cooperative Education 1010-499 (optional, summer)	Co-op
<b>Fourth Year</b>	Biochemistry 1009-702	3
	Inorganic Chemistry I 1012-562	4
	Advanced Instrumental Analysis 1008-711	3
	Preparative Inorganic Chemistry Lab 1011-765	3
	Biochemistry: Metabolism 1009-703	3
	Biochemistry: Nucleic Acids 1009-704	3
	Biochemistry: Experimental Techniques Lab 1009-705	3
	Biology Electives‡	
	Chemistry Electives§	
Research and Thesis Guidance 1010-879#		
<b>Fifth Year</b>	Chemistry Seminar 1010-870	2
	Advanced Instrumental Analysis Lab 1008-621	2
	Advanced Organic Chemistry 1013-737	4
	Advanced Physical Chemistry 1014-741 or 1014-743	4
	Chemistry Electives§	
	Research and Thesis Guidance 1010-879#	

**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.

‡ 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 minimum of 36 hours of 700-level or higher chemistry courses is required to graduate with a BS and MS degree.

# A student will be required to have 9 to 16 hours of Research and Thesis Guidance (1010-879).

## Polymer Chemistry

Polymer science is one of the increasingly important areas of modern science. When it includes the Preparative Inorganic Chemistry Lab (1012-765), the polymer chemistry program 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.

## Polymer chemistry, BS degree, typical course sequence (ACS certified)

		Qtr. Cr. Hrs.
<b>First Year</b>	Chemical Safety 1010-200	1
	Introduction to Co-op and Chemical Careers 1010-230	1
	General Chemistry I, II 1010-251, 252	7
	General Chemistry I Lab 1010-255	1
	Quantitative Analysis I, II 1008-261, 262	7
	Quantitative Analysis Lab I, II 1008-265, 266	3
	Calculus I, II, III 1016-281, 282, 283	12
	Liberal Arts*	16
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
<b>Second Year</b>	Instrumental Analysis 1008-311	3
	Instrumental Analysis Lab 1008-318	1
	Separations Techniques 1008-312	3
	Separations Techniques Lab 1008-319	1
	Multivariable Calculus 1016-305	4
	Organic Chemistry I, II, III 1013-431, 432, 433	9
	Preparative Organic Chemistry Lab I, II 1013-435, 436	2
	Systematic Identification of Organic Compounds III Lab 1013-437	2
	Liberal Arts*	8
	Cooperative Education 1010-499 (optional)	Co-op
<b>Third Year</b>	Introduction to Polymer Technology 1029-301	2
	Differential Equations 1016-306	4
	University Physics I, II, III 1017-311, 312, 313	12
	Chemical Thermodynamics 1014-441	4
	Chemical Literature 1010-401	2
	Chemical Thermodynamics Lab 1014-445	1
	Liberal Arts*‡	4
	Cooperative Education 1010-499 (optional)	Co-op
<b>Fourth Year</b>	Quantum Chemistry 1014-442	4
	Quantum Chemistry Lab 1014-446	1
	Chemical Kinetics 1014-443	4
	Chemical Kinetics Lab 1014-447	1
	Organic Chemistry of Polymers 1029-501	4
	Synthesis of High Polymers Lab 1029-505	2
	Inorganic Chemistry I 1012-562	4
	Polymer Chemistry: Chains and Solutions 1029-502	4
	Liberal Arts*‡	8
Cooperative Education 1010-499 (optional)§	Co-op	
<b>Fifth Year</b>	Biochemistry 1009-502#	3
	Polymer Chemistry: Properties of Bulk Materials 1029-503	4
	Polymer Characterization Lab 1029-504	2
	Preparative Inorganic Chemistry Lab 1012-765#	3
	Chemistry Electives#	4
	University-wide Electives**	
Cooperative Education 1010-499 (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 requirements highly recommend 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.

## Polymer chemistry, combined BS/MS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Chemical Safety 1010-200	1
	Introduction to Co-op and Chemical Careers 1010-230	1
	General Chemistry I, II 1010-251, 252	7
	General Chemistry I Lab 1010-255	1
	Quantitative Analysis I, II 1008-261, 262	7
	Quantitative Analysis Lab I, II 1008-265, 266	3
	Calculus I, II, III 1016-281, 282, 283	12
	Liberal Arts*	20
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
<b>Second Year</b>	Instrumental Analysis 1008-311	3
	Instrumental Analysis Lab 1008-318	1
	Separations Techniques 1008-312	3
	Separations Techniques Lab 1008-319	1
	Multivariable Calculus 1016-305	4
	Differential Equations 1016-306	4
	Organic Chemistry I, II, III 1013-431, 432, 433	9
	Preparative Organic Chemistry Lab I, II 1013-435, 436	2
	Systematic Identification of Organic Compounds III Lab 1013-437	2
	Liberal Arts*	12
	Cooperative Education 1010-499 (optional, summer)	Co-op
<b>Third Year</b>	Introduction to Polymer Technology 1029-301	1
	Chemical Literature 1010-401	2
	University Physics I, II, III 1017-311, 312, 313	12
	Chemical Thermodynamics 1014-441	4
	Chemical Thermodynamics Lab 1014-445	1
	Liberal Arts*‡	4
	Chemistry Electives§	
	Cooperative Education 1010-499 (optional, summer)	Co-op
<b>Fourth Year</b>	Quantum Chemistry 1014-442	4
	Quantum Chemistry Lab 1014-446	1
	Organic Chemistry of Polymers 1029-701	4
	Polymer Chemistry: Chains and Solutions 1029-702	4
	Polymer Characterization Lab 1029-704	2
	Preparative Polymer Chemistry 1029-705	4
	Chemical Kinetics 1014-443	4
	Chemical Kinetics Lab 1014-447	1
	Advanced Instrumental Analysis 1008-711#	3
	Advanced Instrumental Analysis Lab 1008-621#	2
	Inorganic Chemistry I 1012-562	4
	Preparative Inorganic Chemistry Lab 1012-765#	3
	Chemistry Electives§	
Research and Thesis Guidance 1010-879**	3	
<b>Fifth Year§</b>	Biochemistry 1009-702#	3
	Polymer Chemistry: Properties of Bulk Materials 1029-703	4
	Chemistry Seminar 1010-870	2
	Research and Thesis Guidance 1010-879**	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 requirements highly recommend a foreign language (preferably German).

§ 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).

The BS degree can be completed in either four or five years, depending on the number of co-op 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.

## 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.

Students may elect to take a concentration in optical physics as part of their BS degree. The concentration includes, in part, three courses: Optical Physics II, Laser Physics, and Experimental Optics. These can be taken as physics, technical, or free electives during the fourth and fifth years with no additional credit hours to obtain a BS degree. For additional information on AS and 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

		Qtr. Cr. Hrs.
<b>First Year</b>	Introduction to Special Relativity 1017-200	2
	University Physics I, II 1017-311, 312	8
	Project-Based Calculus I, II, III 1016-281, 282, 283	12
	Choose one of the following course sequences:	9 or 8
	General and Analytical Chemistry I, II 1011- 215, 216	
	Chemical Principles Lab I, II 1011-205, 206	
	Introduction to Biology I, II 1001-251, 252	
	Introduction to Computational Physics and Programming 1017-317	4
	Liberal Arts*	16
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
<b>Second Year</b>	University Physics III 1017-313	4
	Modern Physics I, II 1017-314, 315	8
	Electronic Measurements 1017-431	4
	Experiments in Modern Physics I 1017-374	2
	Vibrations and Waves 1017-318	4
	Sophomore Physics Seminar 1017-350	1
	Multivariable Calculus 1016-305	4
	Differential Equations I 1016-306	4
	University-wide Elective	4
	Liberal Arts*	12
	<b>Third Year</b>	Intermediate Mechanics I, II 1017-401, 402
Electricity and Magnetism I, II 1017-411, 412		8
Thermal Physics 1017-415		4
Introduction to Laboratory Techniques 1017-321		4
Mathematical Methods in Physics I 1017-480		4
Experiments in Modern Physics II 1017-378		2
Capstone Preparation 1017-400		1
Liberal Arts*		8
University-wide Elective		4
General Education Elective#		4

## Department of Physics

**Michael Kotlarchyk, Interim Head**

[www.rit.edu/cos/physics/](http://www.rit.edu/cos/physics/)

The department of physics offers programs leading to the AS and BS degrees in physics as well as minors in physics and astronomy.

<b>Fourth Year</b>	Physical Optics I 1017-455	4
	Capstone Project I, II 1017-502, 503	7
	Quantum Mechanics I, II 1017-522, 523	8
	Physics Electives	8
	University-wide Elective	4
	General Education Elective#	10
<b>Total Quarter Credit Hours</b>		<b>187-188</b>

\* 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](http://www.cis.rit.edu)

### Imaging Science

**Carl Salvaggio, Program Coordinator**

Imaging science is a multidisciplinary field based on physics, mathematics, computer science, systems engineering, and chemistry. 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 imaging science leading to MS and doctoral degrees as well as the MS and doctoral degrees in color science. Students also may choose to minor in imaging science.

### Requirements for the BS degree

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

		Qtr. Cr. Hrs.
<b>First Year</b>	Imaging Science First-Year Seminar 1051-200	1
	Imaging in the Physical Sciences 1051-204	4
	Science Electives**	8
	Project-Based Calculus I, II, III 1016-281, 282, 283	12
	University Physics I, II 1017-311, 312	8
	General Education Elective	4
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
<b>Second Year</b>	Programming for Imaging Science 1051-211	4
	Introduction to Imaging Systems 1051-300	4
	Geometrical Optics 1051-303	4
	Physical Optics 1051-455	4
	Linear Mathematics for Imaging 1051-320	4
	Vision and Psychophysics 1051-350	4
	Radiometry 1051-370	4
	Multivariable Calculus 1016-305	4
	University Physics III 1017-313	4
	Modern Physics I 1017-314	4
	Liberal Arts*	4
	Wellness Education†	0
<b>Third Year</b>	Imaging Systems Analysis I, II, III 1051-451, 452, 453	12
	Color Science 1051-402	4
	Digital Image Processing I, II 1051-361, 462	8
	Probability 1016-351	4
	Interactions Between Light and Matter 1051-313	4
	Detectors 1051-465	4
	Research Practices 1051-501	3
	Liberal Arts*	12
<b>Fourth Year</b>	Senior Project 1051-502	4
	Senior Project 1051-503	4
	University-wide Electives	12
	Professional Electives	8
	Liberal Arts*	8
	<b>Total Quarter Credit Hours</b>	<b>182</b>

\* 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

# National Technical Institute for the Deaf

*T. Alan Hurwitz, President, NTID; Vice President and Dean, RIT*

[www.ntid.rit.edu](http://www.ntid.rit.edu)

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 1,200 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, arts and imaging studies, applied mechanical technology, automation technologies, 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, 94 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 seven other colleges may request educational access services, which typically include sign language interpreting services, assistive listening systems, notetaking, or real-time captioning services. Alternative services also will be 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. This area 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 offers a master of science in secondary education of students who are deaf or hard of hearing.

## **NTID's academic programs**

NTID provides student-oriented academic programming to ensure a rich, coherent set of educational experiences for students. NTID offers transfer programs and career-focused associate degrees as well as general education course work in a variety of disciplines.

**Transfer programs:** NTID offers transfer associate degrees and pre-baccalaureate programs. Associate in science (AS) degrees in business, hospitality and service management, and applied computer technology provide optimal transferability to baccalaureate programs in the E. Philip Saunders College of Business, the College of Applied Science and Technology, and the B. Thomas Golisano College of Computing and Information Sciences 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 transfer to 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, automation technologies, business technology, computer-aided drafting technology, computer-integrated machining technology, and laboratory science technology. Program 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 external 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 of study. 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, assistive listening 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

### Transfer programs

Transfer programs offered through NTID prepare qualified students for transfer into 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 E. Philip Saunders College of Business, the College of Applied Science and Technology, or the B. Thomas Golisano College of Computing and Information Sciences. 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. 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 extra-curricular 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 coordinator.

## 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 seven colleges: 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 Imaging Arts and Sciences, College of Liberal Arts, and College of Science. 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, assistive listening systems, notetaking, and real-time captioning services for deaf and hard-of-hearing students taking courses in the other seven 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 seven 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 transfer directly into a program in one of RIT's colleges from another postsecondary program.

**CAREER-FOCUSED AND TRANSFER 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, assistive listening 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  
• Web Development and Database AS Transfer Program

College of Computing and Information Sciences

- Computer Science
- Information Technology
- Networking Security and Systems Administration
- Information Security and Forensics

- Software Development and Management
- Game Design Development
- Medical Informatics
- Software Engineering

**Applied Mechanical Technology**

College of Applied Science and Technology

- Mechanical Engineering Technology
- Manufacturing Engineering Technology

**Applied Optical Technology<sup>‡</sup>**

College of Applied Science and Technology

- Manufacturing Engineering Technology

**Art and Computer Design<sup>†</sup>**

College of Imaging Arts and Sciences

- Art Education
- Ceramics/Ceramic Sculpture
- Computer Graphics Design
- Fine Arts (Illustration, Medical Illustration and Fine Arts Studio)
- Glass/Glass Sculpture

- Graphic Design
- Industrial and Interior Design
- Metal and Jewelry Design
- New Media Design and Imaging
- Woodworking and Furniture Design

**Arts and Imaging Studies**

- Concentrations:
- Graphic Artist
  - Photo Imaging Specialist
  - Print Publishing Specialist
  - Web Design Developer

College of Imaging Arts and Sciences

- School for American Crafts**
- Ceramics/Ceramic Sculpture
  - Glass and Glass Sculpture
  - 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
  - Digital Cinema
- 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**
- New Media Publishing

**Automation Technologies**

College of Applied Science and Technology

- Mechanical Engineering Technology
- Manufacturing Engineering Technology
- Electrical/Mechanical Engineering Technology

**Business Studies**

- Accounting Technology  
Business  
Business Technology

College of Business

- Accounting
- Finance
- International Business
- Management

- Management Information Systems
- Marketing
- New Media Marketing

**Administrative Support Technology**

College of Applied Science and Technology

- Human Resource Development
- Computer Graphics

**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

**Digital Imaging and Publishing Technology<sup>†</sup>**

College of Imaging Arts and Sciences

- Biomedical Photographic Communications
- Film/Video/Animation
- Graphic Communications
- Graphic Media

- Imaging and Photographic Technology
- New Media Publishing
- Professional Photographic Illustration

**Hospitality and Service Management**

- Concentrations:
- Hotel and Resort Management
  - Food Management

College of Applied Science and Technology

- School of Hospitality and Service Management**
- Hotel and Resort Management
  - Food Management

**Laboratory Science Technology**

College of Applied Science and Technology

- Applied Arts and Sciences
- Environmental Management and Technology

College of Science

- Biology
- Biotechnology

- Chemistry
- Environmental Science

<sup>†</sup> This program has been approved for discontinuance. No new students will be admitted in 2009-10.

<sup>‡</sup> This program has been suspended. No new students will be admitted in 2009-10.

Note: In addition to the transfer 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 who are not yet ready to enter a baccalaureate-level program.

## 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 transfer 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 weeklong MyOrientation 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

### General education distribution requirements

Degree	Freshman Seminar	Math and Science	Deaf Cultural Studies/ASL <sup>1</sup>	Language and Literature	Humanities	Social Sciences	Capstone
AS	2	6		Liberal Arts (CLA)-8 <sup>2</sup>	Liberal Arts (CLA)-8	Liberal Arts (CLA)-8	
AAS	2	6	3	Liberal Arts (CLA)-4 <sup>3</sup>	Liberal Arts (CLA)-8	Liberal Arts (CLA)-8	3 <sup>4</sup>
AOS	2	6	(3) <sup>1</sup>	12	6 <sup>5</sup>	6 <sup>5</sup>	3 <sup>4</sup>

<sup>1</sup>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 three-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.

<sup>2</sup>Students earning the AS degree are required to take Writing Seminar (0502-227) and one 4-credit Arts of Expression (0505-319) course.

<sup>3</sup>Students earning the AAS degree are required to take Writing Seminar.

<sup>4</sup>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 transfer 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.

<sup>5</sup>Students earning AOS degrees are required to complete one C-level course in communication studies (either 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.

(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.

### 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. Level D courses prepare students to access the College of Liberal Arts' writing curriculum required for transfer associate degrees 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 cur-

riculum 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.

The social sciences and humanities curricula each 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 three-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 transfer 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, stu-



dents 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 use direct instruction that includes sign language, spoken language, printed/visual aids, Web-based instructional materials, and individual tutoring.

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, assistive listening 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 the students' responsibility. These costs vary depending on each student's program of study. Annual estimated cost for books and supplies for the 2009-10 academic year is \$900 or more.

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 2009-10 is approximately \$720.

### Deaf and hard-of-hearing applicants

Deaf or 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 for transfer directly into 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) or via e-mail at [visitNTID@rit.edu](mailto: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.

## NATIONAL TECHNICAL INSTITUTE FOR THE DEAF FIXED CHARGES 2009-2010 (DOMESTIC STUDENTS)

	Summer Vestibule Program 8/22-9/6/09	NSSO* 8/31-9/6/09	Fall 9/7-11/21/09	Winter 11/30/09-2/27/10	Spring 3/8-5/22/10	Summer 6/7-8/20/10
Tuition	\$609	0	\$3,411	\$3,411	\$3,411	\$3,411
Room	\$216	0	\$1,861	\$1,861	\$1,861	\$1,861
Board (standard meal plan)	\$140	0	\$1,353	\$1,353	\$1,353	1,353
Student fees†	0	0	\$239	\$239	\$239	\$239
Orientation fee‡			\$200			
Student sickness insurance fee §			\$720			
<b>Total</b>	<b>\$965</b>	<b>0</b>	<b>\$7,784</b>	<b>\$6,864</b>	<b>\$6,864</b>	<b>\$6,864</b>

\* 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 (\$69); student activities fee (\$70); athletics fee (\$8); Student Alumni Union fee (\$90); and NTID activities fee (\$2 per quarter).

‡ 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.

## 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. The Lyndon Baines Johnson and the Hugh L. Carey buildings 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, assistive listening 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 the Johnson Building 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, the Johnson Building, boasts a state-of-the-art learning center. Using the latest technologies available, this center provides academic experiences, tutorial services, and course enrichment opportunities for all students. It provides students with access to networked computer workstations, videoconferencing capability, and a special technology-centered classroom.

One of the features of the Johnson Building 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. The Johnson Building 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 include 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.

## 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 implants. 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, career, and academic counseling services to their students. In addition, counselors work closely with students and faculty in the 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 Career Resource and Testing Center provides NTID students useful education/career information and assessment services. Print, video, and online sources of information allow students to learn about personal interests 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) 286-4540 (video phone), (585) 475-6597 (v), or email: reanse@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 priority 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 permanent employment, students in AAS and AOS programs take a required course, Job Search Process (0806-101).

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, 94 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**

[www.ntid.rit.edu/aslie/](http://www.ntid.rit.edu/aslie/)

### **BS Degree Program**

#### **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 (e.g., educational, medical, and/or community interpreting).

#### **Places of employment**

Graduates of this program 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 additional 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.

Note: It is necessary for students in this program to be able to comfortably process auditory information.

For more information on application requirements and procedures, contact NTID Admissions at [www.rit.edu/ntid](http://www.rit.edu/ntid) or (585) 475-6700 (voice/TTY).

## ASL-English interpretation, BS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	American Sign Language I, II, III 0875-201, 202, 203	12
	First-Year Enrichment I, II 1105-051, 052	2
	Mathematics/Science‡	12
	Liberal Arts*	20
	General Education Elective	4
	Wellness Education†	0
<b>Second Year</b>	American Sign Language IV, V, VI 0875-301, 302, 303	12
	Introduction to the Field of Interpreting 0875-213	4
	Mathematics/Science‡	8
	General Education Electives	8
	Intermediate Fingerspelling and Number Skills Development 0875-300	4
	Liberal Arts*	4
	Processing Skills Development 0875-311	4
	Deaf Culture and Community 0875-212	4
<b>Third Year</b>	English to ASL Interpreting I, II 0875-315, 325	8
	ASL to English Interpreting I, II 0875-316, 326	8
	Liberal Arts Concentration	12
	Practical and Ethical Applications 0875-320	4
	Interactive Interpreting 0875-400	4
	General Education Elective	10
<b>Fourth Year</b>	English to ASL Interpreting III 0875-501	4
	ASL to English Interpreting III 0875-502	4
	Free Electives	12
	Practicum and Seminar I, II 0875-350, 510	8
	Issues in Interpreting 0875-520	4
	Interpreting Electives	8
<b>Total Quarter Credit Hours</b>		<b>184</b>

‡Please see the Mathematics and Science General Education Curriculum for more information.

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

† Please see Wellness Education Requirement for more information.

## AAS Degree Program

Students may exit the baccalaureate program with an associate degree based on appropriate credits earned.

### 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 of this program 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.

### Special entrance requirements

In addition to RIT's general admissions procedures, the ASL-English interpretation program requires applicants to complete additional 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.

**Note: It is necessary for students in this program to be able to comfortably process auditory information.**

For more information on application requirements and procedures, contact NTID Admissions at [www.rit.edu/ntid](http://www.rit.edu/ntid), (585) 475-6700 (voice/TTY).

## ASL-English interpretation, AAS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	American Sign Language IV, V, VI 0875-301, 302, 303	12
	Introduction to the Field of Interpreting 0875-213	4
	Intermediate Fingerspelling and Number Skills Development 0875-300	4
	Processing Skills Development 0875-311	4
	Deaf Culture and Community 0875-212	4
	Liberal Arts*	20
	Mathematics/Science‡	8
	First-Year Enrichment I, II 1105-051, 052	2
	Wellness Education†	0
	<b>Second Year</b>	ASL to English Interpreting I, II 0875-316, 326
English to ASL Interpreting I, II 0875-315, 325		8
Practical and Ethical Applications 0875-320		4
Interactive Interpreting 0875-400		4
Interpreting Elective		4
Liberal Arts*		4
Practicum Seminar I 0875-350		4
<b>Total Quarter Credit Hours</b>		<b>94</b>

\* 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.

## Applied Computer Technology

### Elissa Olsen, Chairperson

[www.ntid.rit.edu/current/departments/ics](http://www.ntid.rit.edu/current/departments/ics)

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 and AOS degree programs in applied computer technology take courses to prepare them for computer careers that involve maintaining computer software and hardware, installing and maintaining computer networks, creating websites, and working with various applications related to databases and the World Wide Web. Students in the AS degree program take courses to prepare for transfer to baccalaureate degrees in computer-related fields.

### Program concentrations

Students who choose the AAS or AOS degree options will select a program concentration in the second year. Concentrations include computer technical support, networking and cyber security, and web development and database.

**PC 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 perform-



ing 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 students develop include server set-up, 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.

**Web development and database:** In this concentration, students learn how to design and support websites. This may involve developing interactive websites and web-related multimedia, as well as developing and supporting databases that link to websites.

### On-the-job responsibilities

Students who earn AAS and AOS degrees work as computer technicians, personal computer support specialists, network technicians, network security technicians, network administrators, Web specialists, or database specialists.

### 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.

### AS degree (transfer) program

[www.ntid.rit.edu/current/departments/ics/2plus2.php](http://www.ntid.rit.edu/current/departments/ics/2plus2.php)

The associate of science in applied computer technology is a two-year degree program to prepare deaf and hard-of-hearing students to enter and successfully complete a baccalaureate degree through the information technology program in the B. Thomas Golisano College of Computing and Information Sciences. NTID's AS degree is a direct transfer program specifically designed to articulate with the information technology program in the Golisano College. Coordination between the two colleges maximizes the number of credits a student may transfer 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 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

	Qtr.	Cr. Hrs.
<b>First Year</b>		
Introduction to Networking and Security 0805-224		3
PC Hardware I, II 0805-216, 217		6
Elements of Trigonometry 0884-220		4
Freshman Seminar 0887-200		2
Introduction to UNIX 0805-220		3
Advanced Math 0884-275		4
Liberal Arts*		4
Writing Seminar 0502-227		4
PC Operating Systems 0805-215		3
Programming Fundamentals 0805-390		4
Lab Science§		4
Communications Elective**		3-4
Wellness Education†		0
<b>Second Year</b>		
IT Programming sequence#		12
Introduction to Multimedia 4002-320		4
Computer Networking Fundamentals 4002-351		4
Liberal Arts*		16
Lab Science§		4
Discreet Math 1016-205		3
General Education Elective		
<b>Total Quarter Credit Hours</b>		<b>91-92</b>

\*Please see General Education Distribution Requirements chart for more information.

§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.

\*\*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.

†Please see Wellness Education Requirement for more information.

#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.

### AAS degree program

Upon completing the AAS degree program, students will qualify for a number of positions, including computer technicians, personal computer support specialists, PC and network support specialists, and Web developers.

### 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

	Qtr.	Cr.	Hrs.
<b>First Year</b>			
Applications Software 0805-201			3
PC Hardware I, II 0805-216, 217			6
PC Operating Systems 0805-215			3
Introduction to Networking and Security 0805-224			3
Networking Essentials 0805-225			3
Client/Server Networks 0805-226			3
Web Development I, II 0805-251, 252			6
Foundations of Algebra 0884-180			4
Math Elective (Level B or above)			4
Job Search Process 0806-101			2
Freshman Seminar 0887-200			2
Liberal Arts*			8
Writing Seminar 0502-227			4
Cooperative Education 0805-299		Co-op	
Wellness Education†			0
<b>Second Year</b>			
Introduction to Programming 0805-230			3
Introduction to UNIX 0805-220			3
Microcomputer Database Software 0805-310			3
Concentration Courses#			12
Deaf Cultural Studies/ASL*			3
Technical Elective**			6
Science (B Level or above)			3
Liberal Arts*			8
Employment Seminar 0806-201			1
Math Elective (Level B or above)			4
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.

#Concentration courses for PC technical support are: Orientation to Business (0804-101), Introduction to the Macintosh (0805-351), Server Management and Security (0805-337), and Computer Interfacing (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). Concentration courses for Web development and database are: Client Side Scripting (0805-320), Database Integration (0805-321), Web Server Technologies (0805-322), and Advanced Web Development (0805-323).

\*\*Students may select from applied computer technology electives or approved electives from other majors.

## Applied computer technology, AOS degree, typical course sequence

	Qtr.	Cr.	Hrs.
<b>First Year</b>			
Applications Software 0805-201			3
PC Hardware I, II 0805-216, 217			6
PC Operating Systems 0805-215			3
Introduction to Networking and Security 0805-224			3
Networking Essentials 0805-225			3
Client/Server Networks 0805-226			3
Web Development I, II 0805-251, 252			6
Foundations of Algebra 0884-180			4
Math Elective (Level B or above)			4
Job Search Process 0806-101			2
Freshman Seminar 0887-200			2
English Level C			8
Communication Studies*			3
Cooperative Education 0805-299		Co-op	
Wellness Education†			0
<b>Second Year</b>			
Introduction to Programming 0805-230			3
Introduction to UNIX 0805-220			3
Microcomputer Database Software 0805-310			3
Concentration Courses#			12
Deaf Cultural Studies/ASL*			3
Technical Electives**			6
Science (B Level or above)			3
English Level C			4
Social Sciences*			3
Humanities*			3
Employment Seminar 0806-201			1
Capstone*			3

**Total Quarter Credit Hours** 97

\*Please see the NTID General Education Distribution Requirements chart for more information.

†Please see Wellness Education Requirement for more information.

#Concentration courses for PC technical support are: Orientation to Business (0804-101), Introduction to the Macintosh (0805-351), Server Management and Security (0805-337), and Computer Interfacing (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). Concentration courses for Web development and database are: Client-Side Scripting (0805-320), Database Integration (0805-321), Web Server Technologies (0805-322), and Advanced Web Development (0805-323).

\*\*Students may select from applied computer technology electives or approved electives from other majors.

## AOS degree program

Upon completing the AOS degree program, students will qualify for a number of positions, including computer technicians, personal computer support specialists, PC and network support specialists, and Web developers.

### 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), Elements of Geometry (0884-170), 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 Mechanical Technology

**Dino Laury, Interim Chairperson**

[www.ntid.rit.edu/current/departments/ist/2plus2.php](http://www.ntid.rit.edu/current/departments/ist/2plus2.php)

## AAS degree (transfer) program

The associate in applied science degree in applied mechanical technology is a two-year degree program to prepare students to enter and successfully complete a baccalaureate program in the College of Applied Science and Technology in manufacturing or mechanical engineering technology. Students have opportunities to 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. As a direct transfer program specifically designed to articulate with the manufacturing or mechanical engineering technology programs in the College of Applied Science and Technology, NTID's transfer degree maximizes the number of credits students may transfer toward a baccalaureate degree in either one of these programs.

## 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.

## Transfer 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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Engineering Fundamentals 0813-220	4
Computing Tools for Engineering Technology 0890-212	4
Choose two of the following courses:	8
Elements of Trigonometry 0884-220	
Physics 0885-201	
Written Communication II 0502-111	
Freshman Seminar 0887-200	2
Manufacturing Processes 0813-222	4
CAD Applications in Engineering Tech 0890-214	4
Advanced Math 0884-275	4
Liberal Arts*	4
Writing Seminar 0502-227	4
Industrial Processes 0813-224	4
Design, Dimensioning, and Tolerancing 0890-216	4
College Physics I 1017-211	4
Wellness Education†	0
<hr/>	
<b>Second Year</b>	
Introduction to Materials Technology 0610-211	3
Materials Testing 0610-304	1
College Physics II 1017-212	4
Introduction to Statics 0610-302	4
Strength of Materials 0610-303	4
Calculus for Engineering Technology I, II 1016-231, 232	8
College Physics III 1017-213	4
Principles of Mechanical Design 1 0610-315	4
Pneumatic and Hydraulic Systems 0610-305	4
Liberal Arts*	12
<hr/>	
<b>Total Quarter Credit Hours</b>	<b>98</b>

\*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.

## Applied Optical Technology\*\*

### Dino Laury, Interim Chairperson

The applied optical technology program prepares students to work in the field of precision optics. Students may choose from AAS or AOS degree options. To ensure the highest quality optical components, students develop skills in blocking, edging, curve generating, process control, and testing methods. Additional skill sets will incorporate troubleshooting lens systems, utilizing automation equipment, tooling, testing, and overall quality

assessment to ensure compliance with customer specifications. They have the opportunity to train on equipment used by the industry, including instructional interferometers, autocollimators, spectrometers, and computer numerical control technology. Students work in a highly technical atmosphere producing optical elements designed for use in a wide range of industries such as aerospace, medical, cinematography, and the military.

## AAS degree program

### On-the-job responsibilities

Precision optical technicians set up and operate equipment and execute precision grinding, polishing, and edging processes to produce optical components/systems and perform end-product metrology.

### Places of employment

The program prepares graduates for technical jobs in precision optics manufacturing industries. Positions for which graduates will qualify include entry-level hands-on laboratory/manufacturing positions in precision optics.

### 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:** Placement into Foundations of Algebra (0884-180), Elements of Geometry (0884-170), or a higher-level course. Typically, students entering this program will have completed at least three years of high school mathematics.

**Science:** Placement into Optical Technology Physics (0885-200) or a higher-level course. Typically, students entering this program will have completed at least two years of high school science.

### Applied optical technology, AAS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Engineering Fundamentals 0813-220	4
Computing Tools for ET 0890-212	4
Foundations of Algebra 0884-180	4
Freshman Seminar 0887-200	2
Writing Seminar 0502-227	4
Manufacturing Processes 0813-222	4
CAD Applications in ET 0890-214	4
Integrated Algebra 0884-212	4
Fundamental Geometry 0884-185	1
Applied Optical Physics 0885-200	4
Precision Measurement 0813-255	2
Introduction to CNC 0813-250	2
Deaf Cultural Studies/ASL*	3
Liberal Arts*	4
Wellness Education†	0

\*\* Please note: Admission to these programs has been suspended for the 2009-2010 academic year.

<b>Second Year</b>	Fundamentals of Photonics 0827-210	3
	Orientation to Lens Surfacing 0827-270	3
	Fundamental of Optical Testing 0827-235	3
	CNC Graphics 0813-252	3
	Lens Design and Applications 0827-217	3
	Liberal Arts*	12
	Application of Lens Surfacing 0827-280	4
	Optical Testing 0827-237	3
	Job Search 0806-101	2
	Optical Processes I 0827-200	4
	Optics of Imaging and Design 0827-220	3
	Precision Optics Manufacturing I 0827-240	3
	Cooperative Education 0827-299	Co-op
<b>Third Year</b>	Precision Optics Manufacturing II 0827-245	3
	Optical Processes II 0827-201	4
	Technical Elective	3
	Capstone*	3
<b>Total Quarter Credit Hours</b>		<b>105</b>

\*Please see General Education Distribution Requirements chart for more information.  
†Please see Wellness Education Requirement for more information.

<b>Second Year</b>	Fundamentals of Photonics 0827-210	3
	Orientation to Lens Surfacing 0827-270	3
	CNC Graphics 0813-252	3
	Deaf Cultural Studies/ASL*	3
	Fundamentals of Optical Testing 0827-235	3
	Lens Design and Applications 0827-217	3
	Application of Lens Surfacing 0827-280	4
	Optical Testing 0827-237	3
	Communication Studies*	3
	Job Search 0806-101	2
	Optical Processes I 0827-200	4
	Optics of Imaging and Design 0827-220	3
	Precision Optics Manufacturing I 0827-240	3
Social Science*	3	
Cooperative Education 0827-299	Co-op	
<b>Third Year</b>	Precision Optics Manufacturing II 0827-245	3
	Optical Processes II 0827-201	4
	Technical Elective	3
	Humanities*	3
	Capstone*	3
<b>Total Quarter Credit Hours</b>		<b>106</b>

\*Please see NTID's General Education Distribution Requirements chart for more information.  
†Please see Wellness Education Requirement for more information.

## AOS degree program

### On-the-job responsibilities

Precision optical technicians set up and operate equipment, execute precision grinding, polishing, and edging processes to produce optical components/systems and perform end product metrology.

### Places of employment

The program prepares graduates for technical jobs in precision optics manufacturing industries. Positions for which graduates will qualify include entry-level hands-on laboratory and/or manufacturing positions in precision optics.

### 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:** Placement into Foundations of Algebra (0884-180), Elements of Geometry (0884-170), or a higher-level course. Typically, students entering this program will have completed at least three years of high school mathematics.

**Science:** Placement into Optical Technology Physics (0885-200) or a higher-level course. Typically, students entering this program will have completed at least two years of high school science.

### Applied optical technology, AOS degree, typical course sequence

	Qtr. Cr. Hrs.	
<b>First Year</b>	Engineering Fundamentals 0813-220	4
	Computing Tools for ET 0890-212	4
	English Level C	12
	Manufacturing Processes 0813-222	4
	Foundations of Algebra 0884-180	4
	Integrated Algebra 0884-212	4
	Fundamental Geometry 0884-185	1
	Freshman Seminar 0887-200	2
	CAD Applications in ET 0890-214	4
	Applied Optical Physics 0885-200	4
	Precision Measurement 0813-255	2
	Introduction to CNC 0813-250	2
	Wellness Education†	0

## Art and Computer Design\*\*

### Kenneth F. Hoffmann, Chairperson

Becoming a professional artist requires a variety of computer-based and traditional art skills. The art and computer design program offers a seven-quarter curriculum for students who wish to develop these skills to enter the job market directly after graduation or to continue on in their studies.

### Introductory courses

Several introductory courses are available each quarter for students who have chosen this program as their major or for those who have not yet matriculated into the art and computer design program. Students can take these courses as part of the process of selecting a major, with all credits counting toward degree requirements in art and computer design.

### First-year courses

In addition to the introductory courses taken in the first year, students also will take courses directly related to their major. These courses provide basic skills in both computer-based and traditional media and prepare students for either advanced courses in art and computer design or for continued study toward a bachelor's degree in one of the programs of the College of Imaging Arts and Sciences.

### Work experience

All NTID art and computer design students gain work experience through a required, one-quarter cooperative education experience. In addition, two advanced courses provide experience in completing real work assignments for various on- and off-campus clients.

### AAS and AOS degree programs

NTID art and computer design programs prepare students for careers in the art field. Students may choose from AAS or AOS

\*\*This program has been approved for discontinuance, effective June 2010. No new students will be admitted for the 2009-2010 academic year.



programs. The AAS degree is for students who intend to continue their education toward a bachelor's degree in art. The AOS degree is designed for students who wish to pursue employment after graduation. In addition, students may take courses in related fields such as computer technology, imaging, and publishing.

### On-the-job responsibilities

Graduates use computer-based and traditional methods of design to: produce drawings, layouts, and production art for advertising, sales promotion, public relations, and corporate communications; create visual materials for brochures, pamphlets, instructional media, magazines, newspapers, newsletters, and posters; prepare artwork for printing; and use computer hardware and software and other art studio equipment.

### Places of employment

Graduates usually find employment in a variety of organizations, including computer graphics studios; advertising agencies; commercial art studios; newspapers; manufacturing, printing, and publishing firms; educational institutions; and government agencies.

### Positions for which graduates qualify

Upon completion of the art and computer design program, students will qualify for professional positions such as computer graphics artist, desktop publishing artist, layout artist, and production artist, to name a few.

### Prerequisites

Successful completion of a sampling experience in art, either through the Summer Vestibule Program or the career exploration course offered during the academic year, is a prerequisite for the art and computer design program.

**English—AAS:** 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.

**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:** 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:** Typically, students entering this program will have completed at least two years of high school science.

### Art and computer design, AAS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Visual Idea Development 0825-105	2
	Concepts of Computer Graphics 0825-109	1
	Bit-Map Graphics 0825-110	2
	Freshman Seminar 0887-200	2
	Perspective Drawing 0825-204	2
	Figure Drawing 0825-206	2
	Drawing Composition 0825-208	2
	Vector Graphics 0825-210	2
	Basic Design 0825-211	2
	Color in Design 0825-212	2
	Design for Graphics 0825-213	2
	Basic Typography 0825-221	2
	Electronic Layout Programs 0825-230	2
	Mathematics (Level B)‡	3
	Writing Seminar 0502-227	4
	Liberal Arts*	4
	Science (Level B)	3
Wellness Education†	0	
<b>Second Year</b>	Job Search Process 0806-101	2
	Graphics for Communication 0825-301	3
	Digital Illustration 0825-310	2
	Art History I, II 0825-315, 316	6
	History of Graphic Design 0825-317	3
	Type in Design 0825-321	2
	Introduction to Print Design 0825-324	2
	Basic Production 0825-322	2
	Introduction to Web Design 0825-344	2
	<i>Choose one of the following concentrations:</i>	10
	Print Design:	
	Grid Systems 0825-326	(2)
	Identity Systems Design 0825-327	(3)
	Multipage Design 0825-328	(3)
	Production for Designers 0825-329	(2)
	Web Design:	
	Creating Web Graphics 0825-346	(2)
Web Development I, II 0805-251, 252	(6)	
Designing Websites 0825-347	(2)	
Graphic Studio 0825-351	4	
Open Elective§	2	
Deaf Cultural Studies/ASL*	3	
Liberal Arts*	12	
Cooperative Education 0825-299	Co-op	
<b>Third Year</b>	Employment Seminar 0806-201	1
	Portfolio Presentation 0825-352	4
	Open Elective§	2
	Capstone*	3
	<b>Total Quarter Credit Hours</b>	<b>104</b>

\*Please see NTID's General Education Distribution Requirements chart for more information.

†Please see Wellness Education Requirement for more information.

§Open electives must total at least four quarter credit hours.

‡Satisfied by Concepts of Measurement (0884-150)

### Art and computer design, AOS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Visual Idea Development 0825-105	2
	Concepts of Computer Graphics 0825-109	1
	Bit-Map Graphics 0825-110	2
	Freshman Seminar 0887-200	2
	Perspective Drawing 0825-204	2
	Figure Drawing 0825-206	2
	Drawing Composition 0825-208	2
	Vector Graphics 0825-210	2
	Basic Design 0825-211	2
	Color in Design 0825-212	2
	Design for Graphics 0825-213	2
	Basic Typography 0825-221	2
	Electronic Layout Programs 0825-230	2
	Mathematics (Level B)‡	3
	English Level C	12
	Science (Level B)	3
	Wellness Education†	0

<b>Second Year</b>	Job Search Process 0806-101	2
	Graphics for Communication 0825-301	3
	Digital Illustration 0825-310	2
	Art History I, II 0825-315, 316	6
	History of Graphic Design 0825-317	3
	Type in Design 0825-321	2
	Introduction to Print Design 0825-324	2
	Basic Production 0825-322	2
	Introduction to Web Design 0825-344	2
	Choose one of the following concentrations:	10
	Print Design:	
	Grid Systems 0825-326	(2)
	Identity Systems Design 0825-327	(3)
	Multipage Design 0825-328	(3)
	Production for Designers 0825-329	(2)
	Web Design:	
	Creating Web Graphics 0825-346	(2)
	Web Development I, II 0805-251, 252	(6)
	Designing Websites 0825-347	(2)
	Graphic Studio 0825-351	4
Open Elective§	2	
Deaf Cultural Studies/ASL*	3	
Social Science*	3	
Communication Studies*	3	
Cooperative Education 0825-299	Co-op	
<b>Third Year</b>	Employment Seminar 0806-201	1
	Portfolio Presentation 0825-352	4
	Open Elective§	2
	Humanities*	3
	Capstone*	3
<b>Total Quarter Credit Hours</b>		<b>105</b>

‡ Satisfied by Concepts of Measurement (0884-150)

† Please see Wellness Education Requirement for more information.

§ Open electives must total at least four quarter credit hours.

\* Please see NTID's General Education Distribution Requirements chart for more information.

## Arts and Imaging Studies

**Kenneth F. Hoffmann, Chairperson**

[www.ntid.rit.edu/current/departments/ais/](http://www.ntid.rit.edu/current/departments/ais/)

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.

The arts and imaging studies program offers two associate degrees: the associate in applied science (AAS) and the associate in occupational studies (AOS). Both degrees are career-focused, designed to prepare students for direct employment following graduation. The major course requirements for the two degrees are identical, although differences occur in the university's general education requirements. The AAS degree requires course work through the College of Liberal Arts while the AOS degree includes NTID general education courses.

### Program description

Core courses are required for all students majoring in arts and imaging studies AAS and AOS programs. Six of the core courses are scheduled during the first year and an additional four during the second year. In addition to the core courses taken in the first year, students will begin course work in a concentration, typically

in the third quarter. These courses provide an introduction to the chosen concentration and prepare students for the advanced courses scheduled in the second year of the program.

Four concentrations are available in the arts and imaging studies curriculum:

- Graphic Artist
- Photo Imaging Specialist
- Print Publishing Specialist
- Web Design Developer

The AAS/AOS curriculum includes 12 credits of technical electives and three credits of free electives. Students can select their technical elective courses from other arts and imaging studies concentrations, the department list of technical electives, and, as appropriate, courses from other programs. Free electives can be selected from any program within RIT, depending on availability and prerequisites.

All arts and imaging studies students gain real work experience through a required, one-quarter cooperative education experience. Upon satisfactory completion of the co-op, students complete a required practicum/portfolio development course in which they work as part of a team to complete work assignments for various clients on campus and within the Rochester community.

### On-the-job responsibilities

Depending on the specific program concentration and job placement, graduates use computer-based and traditional methods to produce drawings, layouts, illustrations, and photographic images; prepare documents for print, Web, and digital distribution; produce presentation graphics and special-effects images for film and digital formats; perform digital retouching and restoration of photographic images; produce composite digital images; operate a variety of equipment including analog and digital video equipment, prepress proofing, and plate-making systems, digital or offset printing systems, simple bindery and finishing equipment, and paper processors; produce images on a variety of photographic materials; and use a variety of quality-control procedures to monitor image production, processing, and printing.

### 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, color trade shops, in-house printing departments or photographic labs, book and magazine publishing houses, newspaper facilities, government agencies, custom or commercial photographic labs, industrial training or media departments, imaging production houses, educational media centers, and educational institutions.

Graduates will qualify for positions such as computer graphics artist, graphic designer, desktop publishing artist, layout artist, digital photo artist, digital image capture technician, image preparation technician, digital prepress 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 program concentrations

Graphic Artist Concentration	Qtr. Cr. Hrs.
0855-311 Basic Drawing	3
0855-315 History of Graphic Design	3
0855-318 Typography II	3
0855-319 Graphic Design	3
0855-361 Grid Systems	3
0855-362 Publication Design	3
0855-363 Identity Systems Design	3
<b>Total Quarter Credit Hours</b>	<b>21</b>

Photo Imaging Specialist Concentration	Qtr. Cr. Hrs.
0855-310 Image Acquisition	3
0855-322 Image Manipulation	3
0855-323 Digital Photography I	3
0855-324 Wide-Format Graphics	3
0855-371 Dynamic Image Preparation	3
0855-372 Composite Imaging	3
0855-373 Image Retouch and Restore	3
<b>Total Quarter Credit Hours</b>	<b>21</b>

Print Publishing Specialist Concentration	Qtr. Cr. Hrs.
0855-331, 381 Desktop Publishing I, II	6
0855-332 PDF Production and Workflow	3
0855-333, 383 Publication Production I, II	6
0855-334 Database Publishing	3
0855-382 Interactive PDF Publishing	3
<b>Total Quarter Credit Hours</b>	<b>21</b>

Web Design Developer Concentration	Qtr. Cr. Hrs.
0855-341 Graphics for the Web	3
0855-342, 391, 392 Web Design I, II, III	9
0855-343 Computer Animation	3
0855-344 Videography	3
0855-393 Interactive Digital Media	3
<b>Total Quarter Credit Hours</b>	<b>21</b>

## Arts and imaging studies, AAS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Bitmap Graphics 0855-251	3
Vector Graphics 0855-252	3
Typography I 0855-253	3
Freshman Seminar 0882-100	2
Applied Color Theory 0855-254	3
Design Concept Development 0855-255	3
Publishing Fundamentals 0855-256	3
Mathematics (Level B)‡	3
Liberal Arts*	8
Writing Seminar 0502-227	4
Concentration Courses	9
Wellness Education†	0
<b>Second Year</b>	
Production Fundamentals 0855-351	3
Color Management 0855-352	3
Concentration Courses	12
Technical Electives	6
Job Search Process 0806-101	2
Science (Level B or above)	3
Liberal Arts*	8
Free Elective	3
Deaf Cultural Studies/ASL*	3
Cooperative Education 0855-299	Co-op
<b>Third Year</b>	
Practicum/Portfolio Presentation 0855-353	3
Technical Electives	6
Employment Seminar 0806-201	1
Capstone*	3

**Total Quarter Credit Hours** 100

‡Satisfied by Concepts of Measurement (0884-150) or higher-level course.

\*Please see General Education Distribution Requirements chart for more information.

†Please see Wellness Education Requirement for more information.

## Arts and imaging studies, AOS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Bitmap Graphics 0855-251	3
Vector Graphics 0855-252	3
Typography I 0855-253	3
Freshman Seminar 0882-100	2
Applied Color Theory 0855-254	3
Design Concept Development 0855-255	3
Publishing Fundamentals 0855-256	3
Mathematics (Level B)‡	3
English Level C	12
Concentration Courses	9
Wellness Education†	0
<b>Second Year</b>	
Production Fundamentals 0855-351	3
Color Management 0855-352	3
Concentration Courses	12
Technical Electives	6
Job Search Process 0806-101	2
Science (Level B or above)	3
Humanities*	3
Communication Studies*	3
Social Science*	3
Free Elective	3
Deaf Cultural Studies/ASL*	3
Cooperative Education 0855-299	Co-op
<b>Third Year</b>	
Practicum/Portfolio Presentation 0855-353	3
Technical Electives	6
Employment Seminar 0806-201	1
Capstone*	3

**Total Quarter Credit Hours** 101

‡Satisfied by Concepts of Measurement (0884-150) or higher-level course.

\*Please see General Education Distribution Requirements chart for more information.

†Please see Wellness Education Requirement for more information.

## Automation Technologies

### Dino Laury, Interim Chairperson

[www.ntid.rit.edu/current/departments/ist/AT.php](http://www.ntid.rit.edu/current/departments/ist/AT.php)

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. Students may choose from either the AAS or AOS degree programs.

### 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.

## AAS degree program

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.

### 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:** Placement into Integrated Algebra (0884-212), Elements of Trigonometry (0884-220), 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 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 is beneficial.

## Automation technologies, AAS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Engineering Fundamentals 0813-220	4
Computing Tools for ET 0890-212	4
Integrated Algebra 0884-212	4
Fundamental Geometry 0884-185	1
Freshman Seminar 0887-200	2
Manufacturing Processes 0813-222	4
CAD Applications in Engineering Technology 0890-214	4
Elements of Trigonometry 0884-220	4
Writing Seminar 0502-227	4
Programming Concepts 0891-216	4
Physics I 0885-201	4
Industrial Electronics 0891-212	4
Liberal Arts*	4
Wellness Education†	0
<b>Second Year</b>	
Electromechanical Devices 0891-214	4
PLC Programming 0891-314	4
Pneumatic and Hydraulic Systems 0891-210	3
Liberal Arts*	8
Automated Systems Troubleshooting I 0891-230	4
Automated Systems I, II 0891-220, 320	8
Mechanical Devices and Systems 0891-316	3
Deaf Cultural Studies/ASL*	3
Applied Robotics 0891-318	4
Technical Elective	3
Job Search 0886-101	2
Cooperative Education 0891-299	Co-op
<b>Third Year</b>	
Automated Systems Troubleshooting II 0891-330	4
Liberal Arts*	4
Technical Elective	3
Capstone*	3
<b>Total Quarter Credit Hours</b>	<b>107</b>

\*Please see General Education Distribution Requirements chart for more information.

†Please see Wellness Education Requirement for more information.

## AOS degree program

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.

### Prerequisites

**English:** Placement into level C English or above. Students successfully completing AOS degrees typically enter with reading scores equivalent to 8.0 on the California Reading Test.

**Mathematics:** Placement into Integrated Algebra (0884-212), Elements of Trigonometry (0884-220), 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 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 is beneficial.



## Automation technologies, AOS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Engineering Fundamentals 0813-220	4
	Computing Tools for ET 0890-212	4
	Integrated Algebra 0884-212	4
	Fundamental Geometry 0884-185	1
	Freshman Seminar 0887-200	2
	Manufacturing Processes 0813-222	4
	CAD Applications in ET 0890-214	4
	Elements of Trigonometry 0884-220	4
	English Level C	8
	Programming Concepts 0891-216	4
	Industrial Electronics 0891-212	4
	Physics I 0885-201	4
	Wellness Education†	0
	<b>Second Year</b>	Electromechanical Devices 0891-214
PLC Programming 0891-314		4
Pneumatic and Hydraulic Systems 0891-210		3
English Level C		4
Mechanical Devices and Systems 0891-316		3
Deaf Cultural Studies/ASL*		3
Communication Studies*		3
Job Search 0886-101		2
Automated Systems Troubleshooting I 0891-230		4
Automated Systems I, II 0891-220, 320		8
Applied Robotics 0891-318		4
Social Science*		3
Cooperative Education 0891-299		Co-op
<b>Third Year</b>	Automated Systems Troubleshooting II 0891-330	4
	Humanities*	3
	Technical Elective	3
	Capstone*	3

### Total Quarter Credit Hours

105

\*Please see General Education Distribution Requirements chart for more information.  
†Please see Wellness Education Requirement for more information.

## Business Studies

### Mary Lou Basile, Chairperson

[www.ntid.rit.edu/current/departments/business/](http://www.ntid.rit.edu/current/departments/business/)

Employment opportunities in business and industry increase daily. Business career programs respond to industry's need for people skilled in operating office equipment, maintaining financial records, performing administrative duties, and using computers.

Students may choose the AS degree program in business (transfer program), AAS degree programs in accounting technology and administrative support technology, or the AOS degree program in business technology.

### Microsoft certification

The department operates an authorized testing center for Microsoft® Office Specialist. Preparatory courses are offered for several exams each quarter.

## Business AS degree (transfer) program

[www.ntid.rit.edu/current/departments/business/2plus2.php](http://www.ntid.rit.edu/current/departments/business/2plus2.php)

The associate in science degree in business is a two-year degree program designed to prepare deaf and hard-of-hearing students to enter and successfully complete a baccalaureate program in the

E. Philip Saunders College of Business, which offers a portfolio of comprehensive programs of study designed to prepare students for leadership in the business environment. The Saunders College of Business is accredited by the Association to Advance Collegiate Schools of Business International, the premier accrediting organization for business schools.

The AS degree maximizes the number of credits a student may transfer toward a baccalaureate degree within the Saunders College of Business, which offers programs of study in accounting, consumer finance, finance, graphic media marketing, international business, management, management information systems, and 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.

### Transfer requirements

To transfer to the Saunders College of Business, the student must present a grade point average of 2.5 or higher upon graduation with the associate in science business degree.

## Business, AS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Applications of Algebra 0884-210‡	4
	Science (Level D or above) 0884-250	4
	Orientation to Business 0804-101	3
	Freshman Seminar 0887-200	2
	Liberal Arts*	4
	Writing Seminar 0502-227	4
	Explorations in College Algebra 0884-260	4
	Financial Accounting I, II 0801-211, 212	8
	Fundamentals of Management 0804-284	3
	Algebra for Management Science 1016-225	4
	Business Software Applications 0112-270	2
Wellness Education†	0	
<b>Second Year</b>	Liberal Arts*	16
	Calculus for Management Science 1016-226	4
	Managerial Accounting I, II 0801-221, 222	8
	Laboratory Science (College of Science)	4
	Professional Communication for Business 0535-352	4
	Principles of Microeconomics 0511-211#	4
	Principles of Macroeconomics 0511-402**	4
	Business Information Systems 0112-315	4
Fundamentals of Marketing 0804-286	3	

### Total Quarter Credit Hours

93

‡Entering students who have the math proficiency to waive this course may take Explorations in College Algebra (0884-260).

\*Please see General Education Distribution Requirements chart for more information.

†Please see Wellness Education Requirement for more information.

#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.

## Accounting Technology AAS degree program

[www.ntid.rit.edu/current/departments/business/accountingtech.php](http://www.ntid.rit.edu/current/departments/business/accountingtech.php)

The accounting technology program offers an AAS degree and 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 of this program 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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Accounting I, II 0801-201, 202	8
Orientation to Business 0804-101	3
Business English 0804-110	3
Keyboarding 0804-111	2
OAS Formatting 0804-112	3
OAS Document Production I 0804-113	4
Records Management/Business Calculations 0804-211	3
Payroll/Spreadsheet Applications 0804-212	3
Fundamentals of Marketing 0804-286	3
Mathematics Requirement‡	7
Freshman Seminar 0887-200	2
Deaf Cultural Studies/ASL*	3
Writing Seminar 0502-227	4
Liberal Arts*	8
Science (Level B)	3
Wellness Education†	0
<b>Second Year</b>	
Accounting III, IV 0801-203, 204	8
Cost Accounting I, II 0801-252, 253	8
OAS Document Production II 0804-221	4
Fundamentals of Management 0804-284	3
Liberal Arts*	4
Job Search Process 0806-101	2
Law and Society 0882-242	3
Cooperative Education 0801-299	Co-op

Third Year	Choose one of the following courses:	
	Principles of Microeconomics 0511-211	4
	Economics I, II 0801-231, 232	(6)
	Applied Accounting Techniques 0801-260	2
	Employment Seminar 0806-201	1
	Liberal Arts*	4
	Capstone*	3
<b>Total Quarter Credit Hours</b>		<b>105-107</b>

‡Mathematics Applications for Business Technology (0884-155) and another mathematics elective at level B or higher are required.

\*Please see General Education Distribution Requirements chart for more information.

†Please see Wellness Education Requirement for more information.

## Administrative Support Technology AAS degree program

[www.ntid.rit.edu/current/departments/business/adminsupporttech.php](http://www.ntid.rit.edu/current/departments/business/adminsupporttech.php)

[www.ntid.rit.edu/current/departments/business/2plus2ast.php](http://www.ntid.rit.edu/current/departments/business/2plus2ast.php)

The administrative support technology program offers an AAS degree that 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 and human relations skills. Graduates will input, manipulate, and retrieve data; use interactive office software, electronic mail, and information processing skills for applications such as word processing, spreadsheet, presentation, and database; and perform other office duties.

Students may choose the administrative support technology plus two transfer program, provided they maintain a 2.5 grade point average in the program. Upon successful completion of seven quarters in the AAS program, students transfer directly to the Center for Multidisciplinary Studies in RIT's College of Applied Science and Technology, where they can pursue a bachelor's degree in applied arts and science, with a concentration in human resource development or computer graphics.

### Places of employment

Graduates of this program 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

	Qtr.	Cr.	Hrs.
<b>First Year</b>			
Orientation to Business 0804-101			3
Business English 0804-110			3
Keyboarding 0804-111			2
OAS Formatting 0804-112			3
OAS Document Production I 0804-113			4
OAS Document Production II 0804-221			4
Records Management/Business Calculations 0804-211			3
Payroll/Spreadsheet Applications 0804-212			3
Fundamentals of Marketing 0804-286			3
Mathematics Elective‡			3
Freshman Seminar 0887-200			2
Writing Seminar 0502-227			4
Liberal Arts*			8
Deaf Cultural Studies/ASL*			3
Wellness Education†			0
<b>Second Year</b>			
Accounting I, II 0801-201, 202			8
Special Topics: Web Development for Business 0805-398			3
Administrative Support Technology Seminar 0804-230			3
Fundamentals of Management 0804-284			3
Advanced Applications for Word Processing 0804-302			4
Business Graphics 0804-303			4
Database Applications for Business 0804-304			4
Liberal Arts*			4
Job Search Process 0806-101			2
Law and Society 0882-242			3
Science (Level B)			3
Cooperative Education 0804-299		Co-op	
<b>Third Year</b>			
Applied Business Techniques 0804-291			2
Desktop Publishing Concepts and Applications 0804-310			3
Liberal Arts*			4
Employment Seminar 0806-201			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).

## Business Technology AOS degree program

[www.ntid.rit.edu/current/departments/business/businessstech.php](http://www.ntid.rit.edu/current/departments/business/businessstech.php)

The business technology AOS degree program includes technical course work in accounting, computers, payroll, general office skills, and word processing/information processing skills. Students elect to 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, electronic 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/payable clerk, payroll records clerk, word processing technician, cost accounting clerk, and micro-computer 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

	Qtr.	Cr.	Hrs.
<b>First Year</b>			
Accounting I, II 0801-201, 202			8
Orientation to Business 0804-101			3
Business English 0804-110			3
Keyboarding 0804-111			2
OAS Formatting 0804-112			3
OAS Document Production I 0804-113			4
Records Management/Business Calculations 0804-211			3
Payroll/Spreadsheet Applications 0804-212			3
Mathematics requirement‡			3
Freshman Seminar 0887-200			2
English Level C			12
Wellness Education†			0
<b>Second Year</b>			
Accounting III 0801-203			4
Choose one of the following:			7-8
Cost Accounting I, II 0801-252, 253#			
Database Applications for Business 0804-304**			
Administrative Support Technology Seminar 0804-230**			
OAS Document Production II 0804-221			4
Fundamentals of Management 0804-284			3
Fundamentals of Marketing 0804-286			3
Advanced Applications for Word Processing 0804-302			4
Business Graphics 0804-303			4
Humanities*			3
Science (Level B)			3
Communication Studies*			3
Job Search Process 0806-101			2
Deaf Cultural Studies/ASL*			3
Cooperative Education 0804-299		Co-op	
<b>Third Year</b>			
Choose one of the following:			2-3
Applied Accounting Techniques 0801-260#			
Desktop Publishing for Business 0804-310**			
Applied Business Techniques 0804-291			2
Employment Seminar 0806-201			1
Law and Society 0882-242			3
Social Science*			3
Capstone*			3

**Total Quarter Credit Hours** 103

†Please see Wellness Education Requirement for more information.

#Courses required for accounting technology option

\*\*Courses required for administrative support technology option

\*Please see General Education Distribution Requirements chart for more information.

‡Mathematics Applications for Business Technology (0884-155) is required.

## Computer-Aided Drafting Technology

### Dino Laury, Interim Chairperson

[www.ntid.rit.edu/current/departments/ist/CADT.php](http://www.ntid.rit.edu/current/departments/ist/CADT.php)

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.

Students who wish to work in the architectural, engineering, or construction fields enter either the AAS or AOS degree program. 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.

## AAS degree program

### 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 of this program 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

	Qtr.	Cr. Hrs.
<b>First Year</b>		
Engineering Fundamentals 0813-220		4
Computing Tools for Engineering Technology 0890-212		4
Integrated Algebra 0884-212		4
Fundamental Geometry 0884-185		1
Freshman Seminar 0887-200		2
Manufacturing Processes 0813-222		4
CAD Applications in Engineering Technology 0890-214		4
Elements of Trigonometry 0884-220		4
Writing Seminar 0502-227		4
Construction CAD I 0890-210		4
A/E/C Measuring Systems 0890-208		2
Physics I 0885-201		4
Liberal Arts*		4
Wellness Education†		0

<b>Second Year</b>	Construction CAD II, III 0890-220, 230	8
	Construction Materials and Methods I, II 0890-255, 265	6
	Advanced Math 0884-275	4
	Liberal Arts*	12
	Principles of Structural Systems 0890-275	3
	Job Search Process 0806-101	2
	Advanced Construction CAD 0890-310	4
	GIS Fundamentals 0890-280	3
	Site Utilities Mechanical/Electrical Systems 0890-355	3
	Cooperative Education 0890-299	Co-op

<b>Third Year</b>	Presentation Graphics 0890-320	4
	Technical Elective	3
	Construction Regulations 0890-375	3
	Deaf Cultural Studies/ASL*	3
	Capstone*	3

### Total Quarter Credit Hours

106

\*Please see General Education Distribution Requirements chart for more information.  
†Please see Wellness Education Requirement for more information.

## AOS degree program

### 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**

	Qtr. Cr. Hrs.
<b>First Year</b>	
Engineering Fundamentals 0813-220	4
Computing Tools for Engineering Technology 0890-212	4
Foundations of Algebra 0884-180	4
Freshman Seminar 0887-200	2
English Level C	12
Manufacturing Processes 0813-222	4
CAD Applications in Engineering Technology 0890-214	4
Integrated Algebra 0884-212	4
Fundamental Geometry 0884-185	1
Construction CAD I 0890-210	4
A/E/C Measuring System 0890-208	2
Physics of Matter 0885-154	3
Wellness Education†	0
<b>Second Year</b>	
Construction CAD II, III 0890-220, 230	8
Construction Materials and Methods I, II 0890-255, 265	6
Humanities*	3
Elements of Trigonometry 0884-222	4
Principles of Structural Systems 0890-275	3
Communication Studies*	3
Job Search Process 0806-101	2
Advanced Construction CAD 0890-310	4
GIS Fundamentals 0890-280	3
Site Utilities Mechanical/Electrical Systems 0890-355	3
Social Science*	3
Deaf Cultural Studies/ASL*	3
Cooperative Education 0890-299	Co-op
<b>Third Year</b>	
Presentation Graphics 0890-320	4
Technical Elective	3
Construction Regulations 0890-375	3
Capstone*	3
<b>Total Quarter Credit Hours</b>	<b>106</b>

†Please see Wellness Education Requirement for more information.

\*Please see General Education Distribution Requirements chart for more information.

**Computer-Integrated Machining Technology**

**Dino Laury, Interim Chairperson**

[www.ntid.rit.edu/current/departments/ist/CIMT.php](http://www.ntid.rit.edu/current/departments/ist/CIMT.php)

**AOS degree program**

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 (CNC) machining. 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 of this program 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, Geometric Dimensioning and Tolerancing (0890-260); 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), Elements of Geometry (0884-170) 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**

	Qtr. Cr. Hrs.
<b>First Year</b>	
Engineering Fundamentals 0813-220	4
Computing Tools for Engineering Technology 0890-212	4
Foundations of Algebra 0884-180	4
English Level C	12
Freshman Seminar 0887-200	2
Manufacturing Processes 0813-222	4
CAD Applications in Engineering Technology 0890-214	4
Physics of Matter 0885-154	3
Fundamental Geometry 0884-185	1
Computer-Integrated Machining Technology 1 0813-231	3
Introduction to CNC 0813-250	2
Precision Measurement 0813-255	2
Trigonometry for Coordinate Analysis I 0884-205	3
Blueprint Reading 0813-239	2
Wellness Education†	0

<b>Second Year</b>	Computer-Integrated Machining Technology 2, 3, 4 0813-232, 233, 234	12
	CNC Graphics 0813-252	3
	Industrial Materials 0813-251	3
	Trigonometry for Coordinate Analysis II 0884-206	3
	CNC Solids 0813-254	3
	Precision Optics Manufacturing I 0813-244	2
	<i>Choose one of the following technical electives:</i>	3
	Lens Design and Applications 0813-240	
	Physics I 0885-201	
	Geometric Dimensioning and Tolerancing 0890-260	
	<i>Choose one of the following advanced technical electives:</i>	3
	CNC Toolpaths 0813-257	
	Optical Testing 0813-242	
	Job Search Process 0806-101	2
	Communication Studies*	3
	Social Science*	3
	Deaf Cultural Studies/ASL*	3
Cooperative Education 0813-299	Co-op	
<b>Third Year</b>	<i>Choose one of the following manufacturing technical electives:</i>	6
Automated Machining 0813-258		
Precision Optics Manufacturing II 0813-245		
Humanities*	3	
Employment Seminar 0806-201	1	
Capstone*	3	
	<b>Total Quarter Hour Credits</b>	<b>106</b>

†Please see Wellness Education Requirement for more information.

\* Please see General Education Distribution Requirements chart for more information.

## Digital Imaging and Publishing Technology\*\*

**Kenneth F. Hoffmann, Chairperson**

People who work in digital imaging and publishing careers produce millions of photographic, print, and digital media products used every day by individuals and businesses. Digital technology enables data, text, and graphics to meet the demand for publishing through a wide variety of information dissemination and communication strategies including printed pages, Web pages, and CD-ROMs. This program will prepare students for an exciting and challenging career in the nation's second-largest and fastest-growing manufacturing industry.

### AAS and AOS degree programs

Students may choose from an AAS or AOS degree program. Both options require students to complete a common core of courses that provide the necessary foundation for careers in the imaging and publishing industry. Students will complete at least one career concentration: print publishing and prepress, image production, print output production, or Web production. Technical elective courses may be taken from digital imaging and publishing technology concentrations and from other related NTID technical programs.

Significant program flexibility is available for each student to elect courses based on career interest and aptitude. A 10-week cooperative education experience is required for students in both degree programs.

Students who qualify for the AAS degree program may elect specific mathematics, science, and technical courses from related bachelor's degree programs, as available per enrollment guidelines, in preparation for application to related bachelor's degree programs.

\*\*This program has been approved for discontinuance, effective June 2010. No new students will be admitted for the 2009-2010 academic year.

### On-the-job responsibilities

Depending on specific career preparation and placement, students will produce and prepare documents, illustrations, and photographic images for print reproduction, digital display, and digital distribution; produce presentation graphics and special-effects images for film and digital formats; perform digital retouching and restoration of photographic images; produce composite digital images; operate a variety of analog and digital video equipment; produce programs, prepress proofing and plate-making systems, digital printing systems, offset printing presses, simple bindery and finishing equipment, and paper processors; produce images on a variety of photographic materials; and use a variety of quality-control procedures to monitor image production, processing, and printing.

### Places of employment

Graduates of the digital imaging and publishing technology program will have employment opportunities in commercial, corporate, and government settings. They may work in commercial printing plants, prepress and color trade shop companies; in-house printing departments; book and magazine publishing houses; newspaper facilities; government printing facilities; custom or commercial photographic labs; in-house industrial photographic labs; industrial training or media departments; imaging production houses; or educational media centers.

Positions for which graduates qualify include technician in digital image capture and image preparation, digital prepress, film processing, media production, presentation graphics, or basic video production. Other positions include photographic laboratory technician, custom copy technician, custom color printer, custom color print inspector/evaluator, and operator of digital printing systems or offset lithographic printing press.

### 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 digital imaging and the publishing industries, identify career opportunities, and evaluate their interest and aptitude for the imaging and publishing field.

**English—AAS:** Placement into the College of Liberal Arts' Writing Seminar (0502-227) course. Students typically enter Writing Seminar with reading test scores equivalent to 10.0 on the California Reading Test. However, students who complete AAS degrees typically enter NTID with reading test scores equivalent to 9.0 on the California Reading Test.

**English—AOS:** Placement into English level C or higher. Students successfully completing AOS degrees typically enter with reading test scores equivalent to 8.0 on the California Reading Test.

**Mathematics:** Placement into Concepts of Measurement (0884-150). 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.

### AAS and AOS degree options

Two associate degrees are offered in the digital imaging and publishing technology program. As part of the AAS and AOS

degrees, students may select from the following concentrations. These courses are represented in the course sequence as technical concentration courses in the second and third years. Additionally, two technical electives are required for both degrees.

Print publishing and prepress option		Qtr. Cr. Hrs.
0878-300 Desktop Publishing		3
0878-302 Database Publishing		3
0878-304 Publication Publishing		3
0878-310 Image Acquisition		3
0878-330 Preflight Procedures		3
0878-362 Applied Production I		3
<b>Total Quarter Credit Hours</b>		<b>18</b>

Imaging production option		Qtr. Cr. Hrs.
0878-310 Image Acquisition		3
0878-312 Image Manipulation		3
0878-322 Composite Imaging		3
0878-324 Image Retouch and Restore		3
0878-351 Imaging Lab Fundamentals		3
0878-352 Imaging Lab		3
<b>Total Quarter Credit Hours</b>		<b>18</b>

Print output production option		Qtr. Cr. Hrs.
0878-341 Proofing and Platemaking		3
0878-344, 345 Offset Press I, II		6
0878-346 Digital Printing Systems		3
0878-362 Applied Production I		3
0878-398 Special Topics: DocuTech Operations		3
<b>Total Quarter Credit Hours</b>		<b>18</b>

Web production option		Qtr. Cr. Hrs.
0878-302 Database Publishing		3
0878-306 Network Publishing		3
0878-308 Digital Media Publishing		3
0878-326 Videography		3
0878-328 Digital Media Interactive		3
0878-398 Special Topics: Web Image Preparation		3
<b>Total Quarter Credit Hours</b>		<b>18</b>

DIPT technical electives (choose two)		Qtr. Cr. Hrs.
0878-316 Black and White and Color Halftone Production		3
0878-332 Image Assembly: T and I		3
0878-353 Imaging Lab Production		3
0878-354 Advanced Imaging Lab		3
0878-355 Display Imaging		3
0878-356 Copywork		3
0878-363 Applied Production II		3
0878-364 Applied Production III		3
0878-398 Advanced Digital Print Systems		3
<b>Total Quarter Credit Hours</b>		<b>6</b>

Digital imaging and publishing technology, AAS degree, typical course sequence		Qtr. Cr. Hrs.
<b>First Year</b>	Digital Design and Typography 0878-210	3
	Fundamentals of Image Acquisition 0878-215	3
	Fundamentals of Image Manipulation 0878-220	3
	Fundamentals of Vector Graph Illustration 0878-225	3
	Fundamentals of Desktop Publishing 0878-230	3
	Fundamentals of Digital Media Publishing 0878-235	3
	Fundamentals of Network Publishing 0878-240	3
	Fundamentals of Digital Output 0878-245	3
	Color Theory and Practice 0878-250	3
	Mathematics (Level B)‡	3
	Freshman Seminar 0882-100	2
	Writing Seminar 0502-227	4
	Liberal Arts*	8
	Wellness Education†	0

<b>Second Year</b>	Image Processes and Markets 0878-255	3
	PDF Production and Workflow 0878-305	3
	Preparing Photographs for Publishing 0878-314	3
	Color Management Systems 0878-318	3
	DIPT Technical Concentration Courses	15
	DIPT Technical Elective	3
	Production Procedures and Quality Control 0878-361	3
	Job Search Process 0806-101	2
	Science (Level B or above)	3
	Liberal Arts*	8
	Cooperative Education 0878-299	Co-op

<b>Third Year</b>	DIPT Technical Concentration Course	3
	DIPT Technical Elective	3
	Deaf Cultural Studies/ASL*	3
	Employment Seminar 0806-201	1
	Capstone*	3

**Total Quarter Credit Hours** 103

\*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

### Digital imaging and publishing technology, AOS degree, typical course sequence

		Qtr. Cr. Hrs.
<b>First Year</b>	Digital Design and Typography 0878-210	3
	Fundamentals of Image Acquisition 0878-215	3
	Fundamentals of Image Manipulation 0878-220	3
	Fundamentals of Vector Graph Illustration 0878-225	3
	Fundamentals of Desktop Publishing 0878-230	3
	Fundamentals of Digital Media Publishing 0878-235	3
	Fundamentals of Network Publishing 0878-240	3
	Fundamentals of Digital Output 0878-245	3
	Color Theory and Practice 0878-250	3
	Mathematics (Level B)‡	3
	Freshman Seminar 0882-100	2
	English Level C	12
	Social Sciences*	3
	Wellness Education†	0

<b>Second Year</b>	Image Processes and Markets 0878-255	3
	PDF Production and Workflow 0878-305	3
	Preparing Photographs for Publishing 0878-314	3
	Color Management Systems 0878-318	3
	Technical Concentration Courses	15
	Technical Elective	3
	Production Procedures and Quality Control 0878-361	3
	Job Search Process 0806-101	2
	Humanities*	3
	Science (Level B or above)	3
	Communication Studies*	3
	Cooperative Education 0878-299	Co-op

<b>Third Year</b>	Technical Concentration Course	3
	Technical Elective	3
	Deaf Cultural Studies/ASL*	3
	Employment Seminar 0806-201	1
	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.

‡Satisfied by Concepts of Measurement (0884-150) or higher-level course

## Hospitality and Service Management

**Mary Lou Basile, Chairperson**

[www.ntid.rit.edu/current/departments/business/2plus2\\_hospitality.php](http://www.ntid.rit.edu/current/departments/business/2plus2_hospitality.php)

### AS degree (transfer) program

The associate of science degree in hospitality and service management is a two-year 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 Hospitality and Service Management. Students may choose a concentration in either hotel and resort management or food management.

The program maximizes the number of credits a student may transfer while capitalizing on courses offered through the associate of science degree program in business and complemented by the courses offered in the College of Applied Science and Technology's bachelor of science degree program in hospitality and service 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 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.

#### Transfer requirements

To transfer to the College of Applied Science and Technology's School of Hospitality and Service Management, 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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Writing Seminar 0502-227	4
Freshman Seminar 0887-200	2
Applications of Algebra 0884-210	4
Hotel Operations 0622-200	4
Survey of Service Management 0619-220	2
Hotel Marketing and Sales Management 0622-210	4
Financial Accounting I, II 0801-211, 212	8
NTID Science (Level D)	4
Basic Computer Applications 0619-221	2
Explorations in College Algebra 0884-260	4
Liberal Arts*	4
Resort Development and Management 0622-310	4
Algebra for Management Science 1016-225	4
Wellness Education†	0

<b>Second Year</b>	Liberal Arts*	16
	Managerial Accounting I, II 0801-221, 222	8
	Principles of Microeconomics 0511-211	4
	Facility and Property Management 0622-315	4
	Science with Lab§	4
	Financial Management for Hotels 0622-355	4
	Data Analysis I 1016-319	4
	Fundamentals of Marketing 0804-286	3

**Total Quarter Credit Hours** 97

\*Please see 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) are recommended.

#### Hospitality and service management, AS degree, food management concentration, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Writing Seminar 0502-227	4
Freshman Seminar 0887-200	2
Applications of Algebra 0884-210	4
Principles of Food Production 0621-225	4
Survey of Service Management 0619-220	2
Explorations in College Algebra 0884-260	4
Financial Accounting I, II 0801-211, 212	8
NTID Science (Level D)	4
Basic Computer Applications 0619-221	2
Liberal Arts*	4
Science with Lab§	4
Sanitation and Safety 0621-314	2
Algebra for Management Science 1016-225	4
Wellness Education†	0

<b>Second Year</b>	Liberal Arts*	16
	Restaurant Operations 0621-331	6
	Managerial Accounting I, II 0801-221, 222	8
	Principles of Microeconomics 0511-211	4
	Food and Beverage Management 0621-318	4
	Data Analysis I 1016-319	4
	Fundamentals of Marketing 0804-286	3
	HSM Program Elective	4

**Total Quarter Credit Hours** 97

\*Please see NTID General Education Distribution Requirements chart for more information.

§Health Awareness (1026-221) or Medical Laboratory Procedures (1026-220) are recommended.

†Please see Wellness Education Requirement for more information.

## Laboratory Science Technology

**Vincent A. Daniele, Chairperson**

[www.ntid.rit.edu/current/departments/lst/](http://www.ntid.rit.edu/current/departments/lst/)

[www.ntid.rit.edu/current/departments/lst/LSTplus2.pi](http://www.ntid.rit.edu/current/departments/lst/LSTplus2.pi)

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 College of Applied Science and Technology, individuals who maintain a grade point average of 3.0 or better while in the AAS program are guaranteed acceptance as third-year students in the college's Center



for Multidisciplinary Studies. Through this program students can complete a BS degree in applied arts and science, earning dual professional concentrations in laboratory science and biotechnology.

## 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—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.

**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, AAS degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Introduction to Laboratory Science Technology 0879-200	2
Fundamentals of Cellular Biology 0885-215	4
Writing Seminar 0502-227	4
Freshman Seminar 0887-200	2
Laboratory Science Technology Lab Applications I, II 0879-201, 202	4
Introduction to Laboratory Science Technology Microbiology 0879-218	3
Fundamentals of Chemistry I, II 0885-205, 206	8
Integrated Algebra 0884-212	4
Laboratory Science Technology Microbiology 0879-241	4
Laboratory Math I 0884-231	3
Liberal Arts*	8
Wellness Education†	0
<b>Second Year</b>	
Laboratory Science Technology Lab Applications III, IV, V 0879-203, 204, 205	6
Instrumental Analysis I, II, III 0879-301, 302, 303	10
Principles of Analytical Chemistry 0885-291	4
Laboratory Math II 0884-232	3
Deaf Cultural Studies/ASL*	3
Job Search Process 0806-101	2
Chemical Technology 0879-313	4
Biotechnology 0879-314	4
Principles of Organic Chemistry 0885-292	4
Liberal Arts*	8
Cooperative Education 0879-299	Co-op

<b>Third Year</b>	
Laboratory Science Technology Lab Applications VI 0879-206	2
Senior Seminar 0879-250	2
Technical Elective#	3-4
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 degree, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Introduction to Laboratory Science Technology 0879-200	2
Fundamentals of Cellular Biology 0885-215	4
English Level C	12
Freshman Seminar 0887-200	2
Laboratory Science Technology Lab Applications I, II 0879-201, 202	4
Introduction to Laboratory Science Technology Microbiology 0879-218	3
Fundamentals of Chemistry I, II 0885-205, 206	8
Integrated Algebra 0884-212	4
Laboratory Science Technology Microbiology 0879-241	4
Laboratory Math I 0884-231	3
Wellness Education†	0
<b>Second Year</b>	
Laboratory Science Technology Lab Applications III, IV, V 0879-203, 204, 205	6
Instrumental Analysis I, II, III 0879-301, 302, 303	10
Principles of Analytical Chemistry 0885-291	4
Laboratory Math II 0884-232	3
Job Search Process 0806-101	2
Chemical Technology 0879-313	4
Biotechnology 0879-314	4
Principles of Organic Chemistry 0885-292	4
Social Sciences*	3
Deaf Cultural Studies/ASL*	3
Cooperative Education 0879-299	Co-op
<b>Third Year</b>	
Laboratory Science Technology Lab Applications VI 0879-206	2
Senior Seminar 0879-250	2
Technical Elective#	3-4
Humanities*	3
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.

## Special Certificates

### Deaf Studies Certificate

The deaf studies certificate has been discontinued, effective June 2011. The program is no longer admitting new students.

Those interested in a basic introductory experience in American Sign Language (ASL) and Deaf Culture should refer to the Part-time Undergraduate Studies bulletin for information on courses and degree programs.

## Deaf Studies/American Sign Language (ASL) Certificate

[www.ntid.rit.edu/current/departments/dccs/deafstudies/](http://www.ntid.rit.edu/current/departments/dccs/deafstudies/)

The deaf 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: advocacy and community, or American Sign Language studies.

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 will be granted the certificate upon successful completion of the course requirements in either of the tracks. Courses leading to the certificate are offered as part of the NTID social sciences and humanities curricula. Applicants for the deaf 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.

### Advocacy and community track: required courses

	Qtr. Cr. Hrs.
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
<b>Total Quarter Credit Hours</b>	<b>12</b>

### American Sign Language studies track: required courses

	Qtr. Cr. Hrs.
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	
<b>Total Quarter Credit Hours</b>	<b>12</b>

## Performing Arts Certificate

[www.rit.edu/ntid/theatre/](http://www.rit.edu/ntid/theatre/)

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 three-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 three-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

	Qtr. Cr. Hrs.
<b>Required Course</b>	
0881-298 Performing Arts Practicum	3
<b>Elective Courses–Please choose four of the following:</b>	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	
<b>Total Quarter Credit Hours</b>	<b>15</b>

### Performing Arts Certificate–Technical Theater Emphasis

	Qtr. Cr. Hrs.
<b>Required course</b>	
0881-298 Performing Arts Practicum	3
<b>Elective Courses–Please choose four of the following:</b>	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	
<b>Total Quarter Credit Hours for certification</b>	<b>15</b>

## Pre-baccalaureate Studies

### Arts and Imaging Studies

**Kenneth F. Hoffmann, Chairperson, Arts and Imaging Studies**

### Liberal Studies

**Kathryn L. Schmitz, Interim Chairperson, Liberal Studies**

### Science and Mathematics

**Vincent A. Daniele, Chairperson, Science and Mathematics**

### Engineering Studies

**Dino Laury, Interim Chairperson, Engineering 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

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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Visual Idea Development 0855-310	3
Basic, Intermediate, Advanced Drawing 0855-311, 312, 313	9
Bitmap Graphics 0855-251	3
Design Concept Development 0855-255	3
Vector Graphics 0855-252	3
Typography I, II 0855-253	6
Color in Design 0855-314	3
Elective	3
Liberal Arts*	12
Freshman Seminar 0887-200	2
<b>Total Quarter Credit Hours</b>	<b>44</b>

\*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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Digital Photography I, II 0855-323, 373	6
Basic Drawing 0855-311	3
Visual Idea Development 0855-310	3
Design Concept Development 0855-255	3
Applied Color Theory 0855-254	3
Bitmap Graphics 0855-251	3
Image Acquisition 0855-321	3
Image Manipulation 0855-322	3
Liberal Arts*	12
Freshman Seminar 0887-200	2
<b>Total Quarter Credit Hours</b>	<b>41</b>

\*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

	Qtr. Cr. Hrs.
<b>First Year</b>	
Bitmap Graphics 0855-251	3
Visual Idea Development 0855-310	3
Applied Color Theory 0855-254	3
Design Concept Development 0855-255	3
Image Acquisition 0855-321	3
Image Manipulation 0855-322	3
Digital Photography I 0855-323	3
Level D Math 0884-250 or higher	4
Level D Science 0885-250 or higher	4
Liberal Arts*	12
Freshman Seminar 0887-200	2
<b>Total Quarter Credit Hours</b>	<b>43</b>

\*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 video option, typical course sequence

	Qtr. Cr. Hrs.
<b>First Year</b>	
Digital Video for Multimedia 2065-217#	4
Scriptwriting I 2065-342	3
Film Language 2065-222	2
Theater Electives/NTID Performing Arts**	2-8
Liberal Arts*	12
<b>Total Quarter Credit Hours</b>	<b>23-29</b>

\*\*See College of Imaging Arts and Sciences support coordinator adviser 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**

	Qtr. Cr. Hrs.
<i>First Year</i> Bitmap Graphics 0855-251	3
Vector Graphics 0855-252	3
Typography I 0855-253	3
Applied Color Theory 0855-254	3
Image Acquisition 0855-321	3
Image Manipulation 0855-322	3
Foundations of Algebra 0884-180	4
Applications of Algebra 0884-210	4
<i>Choose one of the following:</i>	4
Explorations in College Algebra 0884-260	
Algebra for Management Science 1016-225	
Level D Science 0885-250 or higher	4
Liberal Arts*	12
Freshman Seminar 0887-200	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**

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**

	Qtr. Cr. Hrs.
<i>First Year</i> Freshman Seminar 0853-200	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**

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**

	Qtr. Cr. Hrs.
<i>First Year</i> Freshman Seminar 0853-200	2
Pre-baccalaureate courses#	(2-5)
General Biology I, II, III 1001-201, 202, 203	9
General Biology Lab 1001-205, 206, 207	3
Liberal Arts*	12
College Algebra and Trigonometry 1016-204	4
Elementary Calculus I, II 1016-214, 215‡	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**

	Qtr. Cr. Hrs.
<i>First Year</i> Freshman Seminar 0853-200	2
Pre-baccalaureate courses#	2-5
General and Analytical Chemistry I, II, III 1011-215, 216, 217	10
Chemistry Labs 1011-205, 206, 227	3
<i>Choose one group of courses:</i>	8-12
Group A:	
Calculus with Foundations I, II 1016-261,262	
Group B:	
Calculus A, B, C 1016-271, 272, 273	
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**

	Qtr. Cr. Hrs.
<i>First Year</i> Freshman Seminar 0853-200	2
Pre-baccalaureate courses#	2-5
<i>Choose one of the following science sequences:</i>	12
Chemical Principles I, II, III with Labs 1011-205, 206, 207	
University Physics I, II, III 1017-311, 312, 313‡§	
<i>Choose one group of courses:</i>	12
Group A:	
Calculus A, B, C 1016-271, 272, 273	
Group B:	
Project-Based Calculus I, II, III 1016-281, 282, 283	
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

---

### Pre-baccalaureate studies in engineering option, typical course sequence

	Qtr. Cr. Hrs.
<i>First Year</i>	
Freshman Seminar 0853-200	2
Pre-baccalaureate courses#	(2)
Major-related courses depending on area of interest	16
College Chemistry 1011-208	4
University Physics I, II 1017-311, 312	8
Liberal Arts*	12
Calculus I, II, III 1016-281, 282, 283‡	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

	Qtr. Cr. Hrs.
<i>First Year</i>	
Freshman Seminar 0853-200	2
Pre-baccalaureate courses#	(2)
Engineering Technology Seminar 0606-101	2
Major-related courses depending on area of interest	16
Liberal Arts*	12
Technical Math I, II 0692-221, 222‡	8
Pre-calculus for Engineering Technology‡	(4)
Calculus for Engineering Technology I, II 1016-231, 232‡	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.

# Course Descriptions

[www.rit.edu/ugrad\\_courses](http://www.rit.edu/ugrad_courses)

*Descriptions of all undergraduate courses offered at Rochester Institute of Technology are available on the RIT website at [www.rit.edu/ugrad\\_courses](http://www.rit.edu/ugrad_courses). Students also may request a Course Descriptions book from their college's academic advising office or the Undergraduate Admissions Office.*

# Graduation Requirements

To earn any academic credential from RIT, students must satisfy a number of requirements. Graduation requirements may vary significantly from program to program, and all students should seek out and use the academic advising resources within their colleges. 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 academic programs at RIT.

II. Program curricula may include several types of courses, including cooperative education, field experience, practicum, thesis and research, and wellness. Most RIT 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 better.)

II. Graduation honors are conferred on associate and bachelor's degree recipients who achieve a 3.40 or higher program cumulative 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 are 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, that they have the writing skills needed for success-

ful entry into their chosen careers. Each academic department determines the criteria and standards for evaluating abilities.

E. Full payment 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

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 listings in this bulletin and through academic advisers.

## Liberal arts advising

---

Liberal arts requirements vary within the individual degree programs on campus. Therefore, it is important that students carefully plan their liberal arts program to meet their specific

degree requirements. Advising staff are available daily in the College of Liberal Arts' Office of Student Services, located on the second floor of the Liberal Arts Building, 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 individual 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 that encourages the use of free time in an enjoyable and constructive manner. 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., Karate/Beginners and Karate/Advanced 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 will be 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 Dugan Davies (Wellness Instructional Program), [dndhd@rit.edu](mailto:dndhd@rit.edu), (585) 475-6232.

**Intercollegiate athletics:** Students participating in the university's intercollegiate athletic program will be granted wellness activity course credit for the season(s) of participation, but must still enroll in First-Year Enrichment (during their freshman year). The Center for Intercollegiate Athletics and Recreation encourages student athletes to enroll in wellness activity courses that are different from their intercollegiate experience to ensure full engagement in a variety of leisure time pursuits.



**Intramural participation:** No credit is granted for intramural sports participation.

**Medical excuse:** A medical excuse *may* exempt a student from participation in the activity segment of the graduation requirement, but the student 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 the student's 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.

## Liberal Arts Concentrations

[http://www.rit.edu/cla/ssa\\_minors\\_concentrations.php](http://www.rit.edu/cla/ssa_minors_concentrations.php)

The College of Liberal Arts offers students two options for completion of their upper-level liberal arts requirements. Students may choose to complete either a liberal arts concentration or a liberal arts minor. It is important to note that the lower-level liberal arts requirements (the core requirements) remain the same regardless of whether a student elects to complete a concentration or a minor.

### Concentrations

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 RIT's Liberal Arts General Education Requirements. Concentrations may be disciplinary or interdisciplinary, and some may require prerequisite course work. The College of Liberal Arts offers concentrations in more than 25 areas of study. A complete list of concentrations, including course requirements, follows.

## American Artistic Experience

### Concentration Adviser: Tina Lent

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 courses from 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 Theater
- 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
- 0505-500 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

\*Topics will vary

## American Politics

### Concentration Advisers: Joseph Fornieri and Sean Sutton

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 courses:

- 0508-484 Environmental Policy
- 0513-449 Special Topics in Political Science
- 0513-450 State and Local Politics
- 0513-451 The Legislative Process
- 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

**Concentration Adviser: William Middleton**

Archaeology is the study of the human past by means of the physical residues of past human behavior: for example, pottery, stone and metal tools, and the remains of ancient dwelling sites. The archaeologist explains how human society has changed and developed over time using such physical evidence. Archaeology is employing techniques from the physical sciences to build a more detailed picture of 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 courses from the following:**

- 0531-444 Survey of Metallurgy
- 0531-445 Field Methods in Archaeology
- 0531-449 Special Topics: Archaeology of the Near East
- 0531-449 Special Topics: Archaeology of Death
- 0531-502 Archaeology and the Human Past
- 0531-506 Great Discoveries in Archaeology
- 0531-507 Archaeological Science
- 0531-508 Archaeology of Cities
- 0531-509 Garbage Archaeology
- 0531-510 Exploring Ancient Technology

## Art History

**Concentration Adviser: Tina Lent**

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 courses:**

- 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
- 0505-437 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\*\*
- 0505-500 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

\*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

**Concentration Adviser: Grant Cos**

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 courses:**

- 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

**Concentration Adviser: Paul Brule**

A concentration in criminal justice will provide 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 courses:**

- 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

### **Concentration Adviser: J. Matt Searls**

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 one of the following linguistics courses:**

- 0504/0525-595 American Sign Language Literature
- 0525-596 Special Topics: Structure of American Sign Language
- 0525-596 Special Topics: Linguistics of American Sign Language

#### **Choose two of the following culture courses:**

- 0504-545 Deaf Literature
- 0507-463 Deaf History
- 0507-473 European Deaf History
- 0515-529 Deaf Culture in America

## Economics

### **Concentration Advisers: Michael Vernarelli and Jeffrey Wagner**

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 courses:**

- 0511-402 Principles of Macro Economics\*\*
- 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

### **Concentration Adviser: Richard Shearman**

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 will also explore the economic, legislative, and regulatory framework within which most environmental decisions are made. Since most technological areas have significant environmental implications associated with them, 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 courses:**

- 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
- 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
- 0511-481\*\*\* Environmental Economics
- 0521-451 Environmental Policy

†Topics will vary.

\*Prerequisite: any two of the history of science or technology courses approved by the department.

\*\*Prerequisite courses: Science and Technology Policy (0508-441), Environmental Policy (0508-484), or Foundations of Public Policy (0521-400)

\*\*\*Prerequisite course: Principles of Microeconomics (0511-211)

## Foreign Language/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 to 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 for proper placement 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.

## American Sign Language (ASL)\*

**Concentration Adviser: J. Matt Searls**

### 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 Literature
- 0507-463 American Deaf History
- 0507-473 European Deaf History
- 0515-529 Deaf Culture in America
- 0504/0525-595 American Sign Language Literature

\*ASL courses taken through NTID cannot be applied toward this concentration.

## Arabic Language/Culture

**Concentration Adviser: Diane Forbes**

**Prerequisite:** Beginning Arabic I (0525-400) or equivalent. All students beginning the study of Advanced Arabic I, II, and III

must see the world languages coordinator (Professor Forbes) for screening. Arabic is part of the World Languages Program. Students with some proficiency will be placed accordingly. Attendance at the orientation meeting (first evening of each quarter) is mandatory.

### 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
- 0507-442 Contemporary Middle East
- 0510-484 Islamic Culture/Middle East

## Chinese Language/Culture

**Concentration Adviser: Hiroko Yamashita**

**Prerequisite:** Beginning Chinese I (0525-420) 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:

- 0525-439 Special Topics: Chinese
- 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 Language/Culture

**Concentration Adviser: Philippe Chavasse**

**Prerequisite:** Beginning French I (0525-440) 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:**

- 0525-459 Special Topics: French Films and Hollywood
- 0504-499 The View from Paris
- 0504-487 Literature of French Black Africa and the Caribbean
- 0510-457 Divided Europe
- 0535-520 Intercultural Communication

## German Language/Culture

---

**Concentration Adviser: Wilma Wierenga**

**Prerequisite:** Beginning German I (0525-460) 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
- 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

*\*Course is offered alternating summers in Germany*

## Italian Language/Culture

---

**Concentration Adviser: Elisabetta D'Amanda**

**Prerequisite:** Beginning Italian I (0525-500) 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
- 0504-500 Italian Literature: Special Topics
- 0505-433 15th Century Art and Architecture of Florence and Rome

- 0505-434 16th Century Art and Architecture of Florence and Rome

*\*Course is offered each summer in Italy*

## Japanese Language/Culture

---

**Concentration Adviser: Yukiko Maru Leary**

**Prerequisite:** Beginning Japanese I (0525-480) 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:**

- 0525-496 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 Language/Culture

---

**Concentration Adviser: Diane Forbes**

**Prerequisite:** Beginning Russian I (0525-540) or equivalent. All students beginning the study of Russian must see the world languages coordinator for screening. Russian is part of the World Languages Program. Students with some proficiency will be placed according to that proficiency. Attendance at the orientation meeting (first evening of each quarter) is mandatory.

**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:**

- 0504-457 Tolstoy
- 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 and the Newly Independent States
- 0513-444 The Cold War and Beyond

## Spanish Language/Culture

**Concentration Adviser: Diane Forbes**

**Prerequisite:** Beginning Spanish I (0525-560) 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:**

- 0525-578 Women in the Hispanic World: Politics of Identity Formation
- 0525-579 Special Topics\*
- 0504-447 Special Topics: Magical Realism
- 0504-461 Latin American Literature
- 0504-479 Latino Experience in Literature
- 0507-445 Modern Latin America
- 0507-453 U.S./Latin American Diplomatic History
- 0507-490 History of Mexico
- 0510-442 Cultures of Latin America
- 0510-444 Social Movements in the Global Economy
- 0513-486 Latin American Politics

\*Special Topics (0525-579) may include the following topics: *The Caribbean and Globalization, Trauma and Survival in First-Person Narrative, and Cuban Film: Cultural and National Identity.*

## History

**Concentration Adviser: Rebecca Edwards**

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 courses:**

- 0507-401 American Women: Colonies to 1848
- 0507-402 American Women: 1848 to Today
- 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 America 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
- 0507-453 U.S./Latin American Diplomatic History
- 0507-456 U.S. and Third World Revolutions in the 20th Century
- 0507-460 Revolutionary Leaders of Latin America
- 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 Disabilities in American History
- 0507-468 The United States and Japan
- 0507-469 Special Topics: History
- 0507-470 European Union/U.S. in 21st Century
- 0507-473 European Deaf History
- 0507-474 America's National Parks
- 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: History

## Global Studies

**Concentration Adviser: Edward Kannyo**

The interdisciplinary concentration in global studies offers courses in the areas of 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 courses:**

- 0507-441 20th Century American Diplomatic History
- 0507-446 Europe Since 1945
- 0507-496 African History
- 0511-448 Economics of Lesser-Developed Countries
- 0513-453 American Foreign Policy
- 0513-461 Comparative Politics

## International Relations

**Concentration Advisers: Edward Kannyo and Dongryul Kim**

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 RIT 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. This concentration offers the prospect of serving their future needs.

**Electives—Choose three of the following courses:**

- 0507-442 Contemporary Middle East
- 0507-444 Strategy and Diplomacy of Europe
- 0507-488 Modern Germany
- 0513-441 Politics in China
- 0513-443 Politics of Russia and the Newly Independent States
- 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
- 0513-484 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 The Search for Peace: The Middle East Peace Process
- 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
- 0513-497 Modern Korea

## Latino/Latina/Latin American Studies

**Concentration Adviser: Diane Forbes**

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. Note: Evening students may not declare this concentration.

**Electives—Choose three of the following courses:**

- 0504-447 Special Topics: Magical Realism
- 0504-461 Latin American Literature
- 0504-479 Latino Experience in Literature
- 0507-445 Modern Latin America

- 0507-490 History of Mexico
- 0510-440 Cultures in Globalization
- 0510-442 Cultures of Latin America
- 0515-483 Hispanic-American Culture
- 0510-444 Social Movements in the Global Economy
- 0513-486 Comparative Politics in Latin America
- 0525-573 Women in the Hispanic World: Politics of Identity Formation
- 0525-579 Special Topics\*

*\*Special Topics (0525-579) may include the following topics: The Caribbean and Globalization, Trauma and Survival in First Person Narrative, and Cuban Film: Cultural and National Identity.*

**One of the following Spanish or Portuguese language courses may be used for this concentration.** The student should consult with the instructor 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

**Concentration Adviser: Richard Santana**

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, contextual, 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 courses:**

- 0504/0525-400 American Sign Language Literature
- 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/Romance
- 0504-455 Shakespeare: Comedy/History
- 0504-457 Tolstoy
- 0504-458 Walt Whitman
- 0504-459 Toni Morrison
- 0504-460 Modern Poetry
- 0504-461 Latin American Literature
- 0504-462 Literature and Technology
- 0504-464 Myth, Legend, Folklore
- 0504-465 Viking Myth and Saga
- 0504-469 American Literature: New Approaches
- 0504-476 Immigrant Voices in American Literature
- 0504-479 Latino Experience in Literature
- 0504-480 Women in Literature
- 0504-493 Maps, Spaces, and Places
- 0504-500 Italian Literature: Special Topics
- 0504-545 Deaf Literature

## Material Cultural Studies

**Concentration Adviser: William Middleton**

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 courses from 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 Lab
- 0531-508 Archaeology of Cities

## Minority Relations in the United States

**Concentration Adviser: Kijana Crawford**

A concentration in minority relations in the United States offers the student a variety of academic perspectives on how groups of persons sharing similar characteristics (whether cultural, inherited, or learned) interact with groups sharing different characteristics. The focus of this concentration will be upon racial and ethnic minorities in the U.S. Courses will examine the issues of differential power between groups and analyze the social structures that are used to maintain or alter these power differences. Studies in this concentration will also look at the interpersonal level of response of both majority and minority group members. Finally the concentration courses will investigate 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 courses:**

- 0504-447 Special Topics: Multicultural Literature
- 0504-461 Latin American Literature
- 0507-496 African History
- 0515-482 African-American Culture
- 0515-483 Hispanic-American Culture
- 0535-484 Rhetoric of Race Relations

*\*Prerequisite: Writing (0502-227)*

## Music

**Concentration Adviser: Carl Atkins**

A concentration in music offers the student a broad range of 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. A maximum of four ensemble credits may be applied to fulfill the requirements for the Music Concentration. *Note: Evening students may not declare this concentration.*

**Electives—Choose three of the following courses:**

- 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 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

**Concentration Adviser:** William Middleton

The Native American science and technology concentration features course work that enhances students' understanding of the unique heritages of Native North Americans and their relationships with other peoples in the United States and Canada. Courses offered 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 courses:**

- 0531-441 GIS Applications
- 0531-442 Cultures in Latin 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

## Peace Studies

**Concentration Adviser:** Evan Selinger

The peace studies concentration enables students to study the varied and significant attempts to conceive and realize peace. Courses in literature, social sciences, and philosophy will enable students to form constructive concepts such as real peace, life quality, human rights, freedom, toleration, and solidarity. The goal of the concentration is to give students a sound understanding of the alternatives to aggression, conflict, or violence as means of settling human disputes. *Note: Evening students may not declare this concentration.*

**Choose three of the following courses:**

- 0504-319 To Make Peace
- 0509-445 Social and Political Philosophy
- 0509-446 Philosophy of Law
- 0509-448 The Philosophy of Peace
- 0510-459 Cultural Images, War, and Terror
- 0513-453 American Foreign Policy
- 0513-488 War and the State
- 0513-491 The Search for Peace: The Middle East Peace Process
- 0535-490 Persuasion and Social Change

## Philosophy

**Concentration Adviser:** Jack Sanders

The philosophy concentration provides students with an opportunity to study the nature, methods, problems, and achievements of philosophical inquiry. Through this concentration, students will develop 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 one interacts. *This concentration is closed to students in the philosophy program.*

**Electives—Choose three of the following courses:**

- 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: One philosophy course

\*\*\*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

§§Prerequisite: At least one prior course in either philosophy or one of the social sciences (psychology, economics, political science, sociology, or anthropology)

‡Prerequisite: Two prior courses in philosophy or permission of the instructor

†Topics will vary.

## Psychology

**Concentration Advisers:** Andrew Herbert, Kirsten Condry

This concentration provides the opportunity for advanced study in various areas of psychology. The courses will 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 courses:**

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

**Concentration Adviser: Richard Sherman**

The purpose of this concentration is to provide students with a clear understanding of public policy, the policy process, and policy analysis. Students will 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 courses:**

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

**Concentration Adviser: Brian Schroeder**

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 gives students the opportunity to engage in the study of religion from the perspective of major western and non-western traditions through an offering of courses in such disciplines as anthropology, history, literature, philosophy, political science, the fine arts, and sociology.

**Electives—Choose three of the following courses:**

0504-464 Myth, Legend, and Folklore  
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  
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/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

\*\*\*On approval by the Religious Studies adviser, certain Special Topics or Great Thinkers courses may also satisfy the requirements for the concentration.

## Science and Technology Studies

**Concentration Adviser: Richard Sherman**

The science and technology studies concentration will examine some major impacts of science and technology in the contemporary world. Special reference will be given to American concerns. Students will 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. The rationale for the concentration is based on the accelerating importance these historically dissimilar, but closely intertwined, fields have on everyday life. In addition,

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 courses:**

- 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 Society
- 0508-446 Makers of Modern Science
- 0508-447\*\* Special Topics
- 0508-449 History of Women in Science and Engineering
- 0508-450 History of Chemistry
- 0508-451 Cyborg Theory: (Re)Thinking the Human Experience
- 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

\*\*Topics will vary.

\*\*\*Prerequisites: Any two of the history of science or technology courses approved by the department

\*\*\*\*Prerequisite: At least one prior course in either philosophy or one of the natural sciences

†Prerequisite: Foundations of Sociology (0515-210) or equivalent

## Sociology and Anthropology

**Concentration Adviser: Paul Grebinger**

This interdisciplinary concentration in sociology and anthropology emphasizes the interrelation between society and culture in different parts of the world: the United States, Europe, Asia, and Latin America. Students are free to explore how people create and experience their social world by selecting courses from a wide range of topics focused on issues such as cultural differences and ethnocentrism, families and kinship, ethnicity and racism, class and inequality, immigration, women, gender and sexuality, health and bodies, urban life and cities, film and mass media, religion, technology and work, globalization, and social and cultural change.

**Prerequisite—Choose one of the following courses:**

- 0515-210 Foundations of Sociology (or equivalent)
- 0510-210 Cultural Anthropology (or equivalent)

**Electives—Choose three of the following courses:**

- 0510-440 Cultures in Globalization
- 0510-442 Cultures of Latin America
- 0510-443 Immigrants in the U.S.

- 0510-444 Social Movements in the Global Economy
- 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 Gender and Sexuality
- 0510-452 Bodies and Culture
- 0510-453 Culture and Expression
- 0510-454 Visual Anthropology
- 0510-457 Divided Europe
- 0510-459 Cultural Images of War and Terror
- 0510-483 Anthropology of Religion
- 0510-484 Islamic Culture/Middle East
- 0510-486 African Cultural Histories
- 0510-502 Archaeology and the Human Past
- 0510-506 Great Discoveries in Archaeology
- 0510-507 Archaeological Science
- 0510-508 The Archaeology of Cities
- 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

## Theater Arts

**Concentration Adviser: Roger Freeman**

The theater arts concentration offers students a focused study of the theatrical and dramatic arts, with courses in dramatic and theatrical literature, history, criticism, and theory. This concentration 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 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
- 0505-488 Special Topics: Theater Arts
- 0505-489 Theater Production Seminar and Workshop
- 0505-502 Shakespeare the Dramatist

- 0522-492 Native American Women's Experience
- 0525-543 Women in the Hispanic World: Politics of Identity Formation

*\*These courses may require prerequisites. Please check the Course Descriptions Booklet.*

*\*\* Special Topics (0522-460) may include the following topics: Traumatic Images, Queer Looks II, Art of Dying, and Contemporary Women's History.*

## Women's and Gender Studies

**Concentration Adviser: Tina Lent**

A concentration in women's and gender studies offers students a variety of academic perspectives on the role of women in modern western civilization. The courses share the following objectives: to examine the roles, values, and self-perceptions of women in a traditionally male-oriented society; to develop a sophisticated, humanistic angle of vision from which to appreciate the many and varied accomplishments of women; and to develop a mature sensitivity to the difficulties and frustrations encountered by women. Although the focus of the concentration will be 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 will be encouraged to relate the intellectual knowledge gained in each course to insights about their own experience and behavior.

**Electives—Choose three of the following courses:**

- 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 Gender and Sexuality
- 0522-452 Bodies and Culture
- 0522-453 Economic Role of Women
- 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 Autobiography

## Writing Studies

**Concentration Advisers: Elizabeth Mazzolini**

This concentration provides opportunities for advanced study in writing and linguistics. These 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 courses:**

- 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
- 0502-560 Special Topics in Writing



# Minors

[www.rit.edu/programs/ugrad/minors/](http://www.rit.edu/programs/ugrad/minors/)

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). Following the list below are descriptions of each minor and requirements for completion.

Accounting  
Advertising and Public Relations  
American Politics  
Applied Communication  
Applied Imaging Systems  
Applied Informatics  
Archaeological Science  
Art History  
Astronomy  
Business Administration  
Chemical Engineering Systems Analysis  
Communication and Culture  
Computer Engineering  
Computer Science  
Construction Management  
Creative Writing  
Criminal Justice  
Database Design and Development  
Deaf Cultural Studies  
Digital Business  
Economics  
Electrical Engineering  
Engineering Management  
Entrepreneurship  
Environmental Modeling  
Environmental Science  
Environmental Studies  
Exercise Science  
Finance  
Foreign Language: Arabic, Chinese, French, German, Italian, Japanese, Russian, Spanish  
Foreign Language/Culture: Arabic, Chinese, German, Italian, Japanese, Russian, Spanish  
Game Design  
Game Design and Development  
Historical Perspectives on Science and Technology  
History: American, European, Modern World  
Human Resource Management  
Imaging Science  
Industrial Engineering  
Industrial Environmental Management  
International Business  
International Relations  
Journalism  
Legal Studies  
Literary and Cultural Studies

Management  
Management Information Systems  
Marketing  
Mass Media Communication  
Mathematics  
Mechanical Engineering  
Microelectronics and Nanofabrication  
Military Studies and Leadership  
Music  
Music and Technology  
Networking and Systems Administration  
Optical Sciences  
Packaging Science  
Philosophy  
Physics  
Political Science  
Print Media  
Psychology  
Public Policy  
Science, Technology, and Policy  
Science, Technology, and Society  
Science Writing  
Service Management  
Sociology and Anthropology  
Software Engineering  
Statistics  
Structural Design  
Sustainable Product Design  
Telecommunications  
Theater Arts  
Web Development  
Web Design and Development  
Urban and Community Studies  
Women's and Gender Studies  
Writing Studies

## Accounting

**Minor Adviser: Jerry Curnutt**

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 courses:

(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

### Minor Adviser: Grant Cos

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

#### Electives—Choose three of the following courses:

- 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 Politics

### Minor Advisers: Joseph Fornieri and Sean Sutton

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 courses:

- 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
- 0513-461 Comparative Politics
- 0513-481 Women in Politics
- 0513-482 African-American Politics

- 0513-485 Politics Through Fiction
- 0513-514 Political Theory

## Applied Communication

### Minor Adviser: Grant Cos

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

#### Electives—Choose three of the following courses:

- 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

### Minor Adviser: Nitin Sampat

The minor in applied imaging systems introduces the business and technology of photographic imaging, primarily as it relates to image output and lab operations. The courses include topics that span the components of an imaging system, from capture to print. These include, but are not limited to, digital capture, output technologies, color management, and imaging workflows.

#### Prerequisites:

2076-211, 212, 213 Materials and Processes of Photo I, II, III (or permission of minor adviser) As a general guideline, this minor is best suited for third- and fourth-year students.

#### Required Courses:

- 2076-411 Imaging Systems
- or
- 2076-401 Systems Design for Graphic Presentation and
- 2076-412 Color Management for Photographers
- 2076-413 Imaging Workflows

**Electives—Choose at least two of the following courses\*:**

- 2061-361 Web Design Using Photography
- 2076-491 Introduction to Digital Imaging
- 2076-492 Electronic Sensitometry
- 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 considered in lieu of these courses by permission of the minor adviser.

## Applied Informatics

**Minor Adviser: Stephen Zilora**

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, and problem solving.

**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 courses:**

- 4002-425 HCI I: Human Factors
- 4002-455 Needs Assessment

## Archaeological Science

**Minor Adviser: William Middleton**

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:**

- 0531-507 Archaeological Science

**Electives—Choose two courses from each of the following groups:**
**Disciplinary Courses:**

- 0531-449 Field Methods in Archaeology
- 0531-502 Archaeology and the Human Past
- 0531-506 Great Discoveries in Archaeology
- 0531-508 Archaeology of Cities

**Applied/Laboratory Courses:**

- 0531-437 Forensic Investigation of Art and Research Methods
- 0531-450 Cultural Resource Management and Historic Preservation
- 0531-510 Exploring Ancient Technology
- 0531-509 Garbage Archaeology
- 0531-441 GIS Applications
- 0531-452 Introduction to Art Conservation
- 0531-443 Native American Repatriation
- 0531-444 Survey of Metallurgy
- 0531-423 Technology of Inorganic Materials
- 0531-422 Technology of Organic Materials

## Art History

**Minor Adviser: Tina Lent**

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 Western Art and Architecture I
- 2039-226 Western Art and Architecture II
- 2039-227 Western Art and Architecture III

**Electives**
**Choose three of the following courses:**

- 0505-421 Introduction to Museums and Collecting
- 0505-422 Technology of Organic Cultural Materials
- 0505-423 Technology of Inorganic Materials
- 0505-424 Legal and Ethical Issues for Collecting Institutions
- 0505-425 Display and Exhibition Design
- 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
- 0505-500 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

*\*Special Topics (0505-452) may include any of the following topics: American Architecture, Queer Looks I, Queer Looks II, Harlem Renaissance, Visual Culture, Reading Images, Traumatic Images, or Art of Dying.*

*\*Special Topics (0505-487) may include the following topics: Persian/Turkish/Mughal Traditions or Art of Islam: Arabic Tradition.*

### Choose three of the following courses:

- 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
- 2039-469 Baroque Rome

*\*Special Topics (2039-553) may include any of the following topics: 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, or Passion for Porcelain.*

## Astronomy

### Minor Adviser: Andrew Robinson

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 must come 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 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).*

## Business Administration

### Minor Adviser: Jerry Curnutt

This minor is appropriate for undergraduate students interested in broad exposure to the world of business. Undergraduate students interested in pursuing an MBA degree from RIT may use this minor to waive certain MBA foundation courses.

### Required Courses—Choose three of the following courses:

- 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
- 0112-315 Business Information Systems Processes
- 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

**Minor Adviser: Steven Weinstein**

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 courses\*:**

- 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 Waste Water 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:

- 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

*\*Each of the listed courses has a chemistry course prerequisite, so actually represent a two-course sequence that is required for entry into the minor.*

*\*\*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).*

## Communication and Culture

**Minor Adviser: Grant Cos**

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

**Electives—Choose three of the following courses:**

- 0535-410 Computer-Mediated Communication
- 0535-411 Health Communication
- 0535-414 Interpersonal Communication
- 0535-420 Argument and Discourse
- 0535-444 Rhetoric of Free Speech
- 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

**Minor Advisers: Andreas Savakis and Roy Melton**

Computer engineering is an interdisciplinary field that involves the study and application of software, hardware, and systems. A minor in computer engineering exposes students to the fundamentals of computer engineering and provides a foundation for the exploration of specialized subjects in computer engineering professional electives or graduate courses.

**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 courses:**

- 0306-351 Hardware Description Languages
- 0306-381 Applied Programming
- 0306-451 Digital Signal Processing
- 0306-460 Electronics for Computer Engineers
- 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
- 0306-658 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

**Minor Adviser: Henry A. Etlinger**

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 4003-231, 232, 233 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 courses:**

- 4003-231 Computer Science 1
- 4003-232 Computer Science 2
- 4003-233 Computer Science 3
- 4003-334 Computer Science 4
- 4003-345 Computer Organization
- 4003-380 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

**Minor Adviser: John Morelli**

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 courses:**

- 0608-500 Labor Relations
- 0608-460 Construction Equipment
- 0608-444 Mechanical and Electrical Equipment for Buildings
- 0633-504 Construction Safety

## Creative Writing

**Minor Adviser: Linda Reinfeld**

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 courses:**

- 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 courses:**

- 0504-441 Art of Poetry
- 0504-442 The Short Story
- 0504-443 The Novel
- 0504-460 Modern Poetry

*\*Students in the creative writing minor have the option to take one of the creative writing courses and then take Advanced Creative Writing twice in order to complete an extended writing project.*

## Criminal Justice

**Minor Adviser: Paul Brule**

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 degree program.

**Required Course:**

0501-400 Criminology

**Electives—Choose four of the following courses:**

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****Minor Adviser: Edward Holden**

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 prior to beginning courses for this minor.

**Required Course—Choose one of the following courses:**

4002-360 Introduction to Database and Data Modeling  
 4003-385 Concepts of Data Management

**Electives—Complete all four of the following courses:**

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****Minor Adviser: J. Matt Searls**

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 courses:**

0525-391 American Sign Language II  
 0525-595 American Sign Language Literature  
 0525-595 Linguistics of American Sign Language

**Electives—Choose four of the following courses:**

0525-392 American Sign Language III  
 0525-595 American Sign Language Literature  
 0525-595 Linguistics of American Sign Language  
 0515-529 Deaf Culture in America  
 0507-463 American Deaf History  
 0507-473 European Deaf History  
 0504-545 Deaf American Literature

**Digital Business****Minor Adviser: Jerry Curnutt**

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 courses:**

0102-415 Digital Entrepreneurship  
 0105-363 Principles of Marketing  
 0105-440 Internet Marketing  
 0105-445 Business to Business E-commerce  
 0102-530 Managing Innovation and Technology  
 0104-359 Financing New Ventures  
 0112-340 Database Management Systems  
 01xx-xxx Suggested Seminars in Digital Business Related Topics

**Economics****Minor Advisers: Michael Vernarelli and Jeffrey Wagner**

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 economic program.

**Prerequisite:**

0511-211 Principles of Microeconomics

**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  
 0511-480 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

**Electrical Engineering****Minor Adviser: Sohail Dianat**

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:**

1016-314 Engineering Statistics  
 1016-328 Engineering Mathematics  
 1016-420 Complex Variables  
 1016-351 Probability and Statistics  
 4001-211 Programming Using C

**Required Courses:**

0301-381 Circuits I  
 0301-382 Circuits II

**Electives—Choose three of the following courses:**

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****Minor Adviser: Jacqueline Mozrall**

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 courses:**

0303-401 Operations Research  
 0303-402 Production Control  
 0303-422 Systems and Facilities Planning  
 0303-503 Systems Simulation  
 0303-510 Applied Statistical Quality Control  
 0303-703 Supply Chain Management  
 0303-726 Contemporary Production Techniques  
 0303-734 Systems Safety Engineering  
 0303-758 Design of Experiments  
 0303-765 Databases for Information Systems



- 0303-766 Manufacturing Systems
- 0303-784 Systems Project Management
- 0303-785 Engineering Risk Benefit Analysis

\*Other elective courses may be appropriate with minor adviser approval.

## Entrepreneurship

**Minor Adviser: Jerry Curnutt**

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

### Electives—Choose three of the following courses:

- 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
- 0610-518 Design and Development
- 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

**Minor Adviser: Karl Korfmacher**

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 system (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

### Elective Courses—Choose two of the following courses:

- 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

**Minor Adviser: Karl Korfmacher**

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

### Elective Courses—Choose two of the following courses:

- 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

**Minor Adviser: Richard Shearman**

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 of 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 courses:**

- 0508-580 Environmental Studies Seminar
- 0508-530 Seminar in Science, Technology, and the Environment

**Electives—Choose four of the following courses:**

- 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
- 0509-453 Environmental Philosophy
- 0510-449 Sustainable Development
- 0511-481\*\* Environmental Economics
- 0511-484\*\* Natural Resource Economics
- 0515-449† Population and Society

\* Great Lakes I (0508-463) is a prerequisite for this course.

\*\* Principles of Microeconomics (0511-211) is a prerequisite for these courses.

† Cultural Anthropology (0510-210), Foundations of Sociology (0515-210), or an equivalent are prerequisites 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.

## Exercise Science

**Minor Adviser: William Brewer**

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

**Elective Courses—Choose one of the following courses:**

- 1026-307 Exercise Prescription for Special Populations
- 0620-300 Sports Nutrition

## Finance

**Minor Adviser: Jerry Curnutt**

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 courses:**

- 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

## Foreign Language

This minor provides two full years of foreign language instruction to prepare students for living and working within an intercultural society both at home and abroad. Students may choose a foreign 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.

## Arabic Language

**Minor Adviser: Diane Forbes**

All students beginning the study of Advanced Arabic I, II, and III must see the world languages coordinator (Professor Forbes)

for screening. Advanced Arabic is part of the World Languages Program. Attendance at the orientation meeting (first evening of each quarter) is mandatory.

**Prerequisite:**

0525-400 Beginning Arabic I

**Required Courses—Choose five of the following courses:**

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 Language

---

**Minor Adviser:** *Hiroko Yamashita*

**Prerequisite:**

0525-420 Beginning Chinese I

**Required Courses—Choose five of the following courses:**

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 Language

---

**Minor Adviser:** *Philippe Chavasse*

**Prerequisite:**

0525-440 Beginning French I

**Required Courses—Choose five of the following courses:**

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 Language

---

**Minor Adviser:** *Wilma Wierenga*

**Prerequisite:**

0525-460 Beginning German I

**Required Courses—Choose five of the following courses:**

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 Language

---

**Minor Adviser:** *Elisabetta D'Amanda*

**Prerequisite:**

0525-500 Beginning Italian I

**Required Courses—Choose five of the following courses:**

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 Language

---

**Minor Adviser:** *Yukiko Maru Leary*

**Prerequisite:**

0525-480 Beginning Japanese I

**Required Courses—Choose five of the following courses:**

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 Language

---

**Minor Adviser:** *Diane Forbes*

**Prerequisite:**

0525-540 Beginning Russian I

**Required Courses—Choose five of the following courses:**

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 Language

**Minor Adviser: Diane Forbes**

### Prerequisite:

0525-560 Beginning Spanish I

### Required Courses—Choose five of the following courses:

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

## Foreign Language/Culture

The foreign language/culture minor provides intermediate study in foreign language and appropriate courses in the culture of the chosen language area. This interdisciplinary minor is offered in Arabic, Chinese, German, Italian, Japanese, Russian, and Spanish. Please note: Evening students and fluent native speakers of a language offered may not choose a minor in that language.

## Arabic Language/Culture

**Minor Adviser: Diane Forbes**

All students beginning the study of Advanced Arabic I, II, and III must see the world languages coordinator (Professor Forbes) for screening. Advanced Arabic is part of the World Languages Program. Attendance at the orientation meeting (first evening of each quarter) is mandatory.

### Prerequisite:

0525-400 Beginning Arabic I

### Required Courses—A sequence of three language courses 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 Language/Culture

**Minor Adviser: Hiroko Yamashita**

### Prerequisite:

0525-420 Beginning Chinese I

### Required Courses—A sequence of three language courses 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 Language/Culture

**Minor Adviser: Wilma Wierenga**

### Prerequisite:

0525-460 Beginning German I

### Required Courses—A sequence of three language courses 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 in German  
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 Language/Culture

---

**Minor Adviser:** *Elisabetta D’Amanda*

**Prerequisite:**

0525-500 Beginning Italian I

**Required Courses—A sequence of three language courses 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  
0504-477 Survey of Italian Literature  
0504-491 Modern Italian Poetry  
0504-500 Topics in Italian Literature  
0505-433 15th Century Art and Architecture of Florence and Rome  
0505-434 16th Century Art and Architecture of Florence and Rome

*\* Contemporary Italian Culture (0525-519) is offered each summer in Italy.*

## Japanese Language/Culture

---

**Minor Adviser:** *Yukiko Maru Leary*

**Prerequisite:**

0525-480 Beginning Japanese I

**Required Courses—A sequence of three language courses 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**

0525-510 Languages in Japanese Society  
0525-511 Structure of Japanese Language  
0525-579 Japanese Culture in Print  
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 Language/Culture

---

**Minor Adviser:** *Diane Forbes*

**Prerequisite:**

0525-540 Beginning Russian I

**Required Courses—A sequence of three language courses 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**

0504-456 Dostoyevsky  
0504-457 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 Policy in Russia/New States  
0513-444 International Studies: Cold War and Beyond

## Spanish Language/Culture

---

**Minor Adviser:** *Diane Forbes*

**Prerequisite:**

0525-560 Beginning Spanish I

**Required—A sequence of three language courses 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**

0525-578 Women in the Hispanic World: Politics of Identity Formation  
0525-579 Special Topics\*  
0504-461 Latin American Literature  
0507-445 Modern Latin America  
0507-453 U.S.-Latin American Diplomatic History  
0507-490 History of Mexico  
0510-442 Cultures of Latin America  
0510-444 Social Movements/Global Economy  
0513-486 Latin American Politics

*\* Special Topics (0525-579) may include the following topics: The Caribbean and Globalization, Trauma and Survival in First Person Narrative, or Cuban Film: Cultural and National Identity.*

## Game Design

**Minor Adviser: Andrew Phelps**

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 decisions as they relate to the commercial industry.

**Prerequisites:** None

**Required Courses—Students must complete the following four courses:**

- 4002-346 2D Animation for Interactive Media
- 4002-230 Introduction to Programming for New Media
- 4002-231 Programming for New Media II
- 4002-380 Fundamentals of Game Design and Development I

**Elective Course—Choose one of the following courses:**

- 4002-381 Fundamentals of Game Design and Development II
- 4002-434 Programming for Digital Media
- 4002-4354 3D Modeling and Animation for Interactive Media

## Game Design and Development

**Minor Adviser: Andrew Phelps**

Game design and development is an interdisciplinary minor that involves the study and application of several disparate areas toward the goal of creating an entertaining experience for the player. A minor in game design and development exposes students to the fundamentals of both the design and construction of interactive games as well as the programmatic implementation of game systems. The minor also provides a foundation for the exploration of specialized subjects through professional electives or graduate courses.

**Prerequisites:** Students must complete the following prerequisites: (1) a three-course programming sequence, (2) an introductory course in Web and multimedia, (3) a two-course discrete mathematics sequence, and (4) a two-course physics sequence.

**Required Courses—Students must complete the following five courses:**

- 4002-330 Interactive Digital Media
- 4002-380 Fundamentals of Game Design and Development I
- 4002-381 Fundamentals of Game Design and Development II
- 4002-387 Data Structures and Algorithms for Game Programmers I
- 4002-487 Data Structures and Algorithms for Game Programmers II

## Historical Perspectives on Science and Technology

**Minor Adviser: Christine Keiner**

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 will 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 courses\*:**

- 0508-520 Historical Perspectives on Science and Technology Seminar
- 0508-530 Seminar in Science, Technology and the Environment

**Electives—Choose four of the following courses:**

- 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
- 0508-582 Seminar in Science, Technology, and the Environment

*\*Prerequisite: Any two of the designated history of science and technology courses.*

## History

### American History

**Minor Adviser: Rebecca Edwards**

The American history minor emphasizes the social, cultural, and political history of the United States.

**Required Courses—Choose five of the following courses:**

- 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
- 0507-492 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

### European History

**Minor Adviser: Rebecca Edwards**

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 courses:**

- 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 World History****Minor Adviser: Rebecca Edwards**

The modern world history minor provides a comparative perspective in modern world history.

**Required Courses—Choose five of the following courses, with at least one from each of the three groups below:****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
- 0507-495 The Civil Rights Movement in 20th Century U.S. History

**Human Resource Management****Minor Advisers: Jon Horne and Carol Whitlock**

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 offers courses covering 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 courses:**

- 0619-480 Human Resource Management
- or
- 0113-400 Managing in the Global Environment
- 0626-427 Employment/Labor Law
- 0697-442 The Learning Organization
- or
- 0102-320 Organizational Behavior

**Electives—Choose two of the following courses:**

- 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****Minor Adviser: Carl Salvaggio**

Students will 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

**Minor Adviser: Jacqueline Mozrall**

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)

### Core Courses—Select at least three of the following courses:

- 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
- 0303-525 Manufacturing Engineering

### Electives\*—Choose two of the following courses:

- 0303-516 Human Factors
- 0303-630 Advanced Systems Integration
- 0303-703 Supply Chain Management
- 0303-711 Advanced Simulation Techniques
- 0303-726 Contemporary Production Systems
- 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
- 0303-784 Systems and Project Management
- 0303-785 Economic Risk Benefit Analysis

\*Other elective courses may be appropriate with minor adviser approval.

## Industrial Environmental Management

**Minor Adviser: John Morelli**

The industrial environmental management minor will broaden the learning experiences and professional opportunities of students in technical and business disciplines who have an interest in the management of waste water, 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 courses:

- 0630-480 Environmental Regulatory Law
- 0630-505 Resource Reduction
- 0630-515 Corporate Environmental Management

## International Business

**Minor Adviser: Jerry Curnutt**

Students minoring in international business will 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 courses:

- 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

**Minor Advisers: Edward Kannyo and Spencer Meredith**

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.

### Required Courses—Choose one of the following:

- 0513-214 Introduction to International Relations
- 0513-461 Comparative Politics

### Electives—Choose four of the following courses:

- 0507-442 Contemporary Middle East



- 0507-444 Strategy and Diplomacy: Europe
- 0507-488 Modern Germany
- 0513-441 Politics in China
- 0513-443 Politics of Russia and the Newly Independent States
- 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 The Middle East Peace Process
- 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

**Minor Adviser: Grant Cos**

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 courses:

- 0535-416 Newswriting
- 0535-470 Law and Ethics of the Press
- 0535-472 News Editing
- 0535-473 eJournalism
- 0535-532 Professional Writing

## Legal Studies

**Minor Advisers: Joseph Fornieri, Laverne McQuiller-Williams, Sara Smyth, and Sean Sutton**

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:

- 0501/0513-464 Law and Society

### Electives Courses—Choose two courses from each group

#### Group A: Theoretical and Historical Approaches to Law

- 0501-405 Major Issues\*
- 0501-444 Concepts in Criminal Law
- 0507-446 American Slavery, American Freedom
- 0507-467 American Disability 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\*
- 0501-409 Legal Rights of the Offender
- 0501-456 Courts
- 0501-506 Evidence
- 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: *Comparative Criminal Law, Victimless Crime, Seminar in Law, Fundamentals of Legal Research I, Cyberlaw, Issues in Criminal Prosecution, or Federal Crime and Justice.*

## Literary and Cultural Studies

**Minor Adviser: Richard Santana**

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, offered by the department of English, are writing intensive and offer opportunities for sustained writing and communication practice.

**Prerequisites:**

0504-227 Writing (or equivalent)

**Electives—Choose five of the following courses:**

0504-440 Drama/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  
 0504-450 Ibsen: Family and Society  
 0504-454 Shakespeare: Tragedy  
 0504-455 Shakespeare: Comedy  
 0504-456 Dostoevsky  
 0504-457 Tolstoy  
 0504-458 Walt Whitman  
 0504-459 Toni Morrison  
 0504-460 Modern Poetry  
 0504-461 Latin American Literature  
 0504-462 Literature and Technology  
 0504-464 Myth, Legend, Folklore  
 0504-465 Viking Myth and Saga  
 0504-466 Early Black Writers  
 0504-467 Black Writers Today  
 0504-468 Literary Representations of America  
 0504-469 American Literature: New Approaches  
 0504-471 Irish Literature  
 0504-474 British Romantic Literature  
 0504-476 Immigrant Voices in American Literature  
 0504-477 Survey of Italian Literature  
 0504-479 The Latino Experience in Literature  
 0504-480 Women in Literature  
 0504-484 Literature and Religion  
 0504-490 Outlaw Narratives: Autobiography  
 0504-491 Modern Italian Poetry  
 0504-492 Native American Women's Experience  
 0504-493 Maps, Spaces, and Places  
 0504-494 Pan-Indian Native American Literature, 1890-1967  
 0504-495 Contemporary Native American Literature, 1968-Present  
 0504-500 Italian Literature: Special Topics  
 0504-510 The View from Paris  
 0504-524 Contemporary Film  
 0504-545 Deaf Literature  
 0523-400 American Studies

0102-250\* 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

**Minor Adviser: Jerry Curnutt**

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 will enhance the career options of students in any major and increase 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

**Minor Adviser: Jerry Curnutt**

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 courses:**

0105-440 Internet Marketing  
 0105-445 Business to Business E-Commerce  
 0105-505 Buyer Behavior  
 0105-550 Marketing Management  
 0105-551 Marketing Research  
 0105-553 Sales Management  
 0105-559 Professional Selling  
 0105-560 Integrated Marketing Communications  
 0113-450 Marketing in the Global Environment

## Management

**Faculty Adviser: Jerry Curnutt**

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 courses:**

## Mass Media Communication

**Minor Adviser: Grant Cos**

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

**Electives—Choose three of the following courses:**

- 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
- 0535-524 Communication and Documentary Film
- 0535-550 Film and Society

## Mathematics

**Minor Adviser: James Halavin**

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 courses, 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

**Minor Adviser: Alan Nye**

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
- 1011-208 College Chemistry
- 1017-312 University Physics I

**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

## Microelectronics and Nanofabrication

**Minor Adviser: Michael Jackson**

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. The minor builds on the strength of RIT's microelectronics and micro/nanofabrication facilities, faculty, and existing academic programs.

### Prerequisites:

- 1016-281 Calculus I
- 1016-282 Calculus 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 courses:

- 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.

## Military Studies and Leadership

**Minor Advisers: Lt. Col. Mark A. Avery and Lt. Col. Lynn Lubiak**

The minor in military studies and leadership provides students with the opportunity to learn about military officer training and their 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: 20 quarter credit hours required

**Group 1—Choose any combination from Group 1 to earn a minimum of 3 quarter credit hours.**

- 0650-210 The Air Force Today
- 0650-211 The Air Force Today II
- 0650-212 The Air Force Today III
- 0640-201 Introduction to Military Science/Personnel Development

- 0640-202 Introduction to Military Leadership
- 0640-203 Introduction to Tactical Leadership

**Group 2—Choose any combination from Group 2 to earn a minimum of 3 quarter credit hours.**

- 0519-201 History of Airpower I
- 0519-202 History of Airpower II
- 0519-203 History of Airpower III
- 0640-301 Military Geography
- 0640-302 Psychology and Leadership
- 0640-303 Military and American Society

**Group 3—Choose any combination from Group 3 to earn a minimum of 8 quarter credit hours.**

- 0102-310 Air Force Management and Leadership I
- 0102-311 Air Force Management and Leadership II
- 0640-401 Military Tactics
- 0640-402 Military Communications
- 0640-403 Military Operations

**Group 4—Choose any combination from Group 4 to earn a minimum of 3 quarter credit hours.**

- 0513-401 National Security Forces I
- 0640-501 Army Training System
- 0640-502 Military Administration and Logistics
- 0640-503 Military Ethics

**Group 5—Elective: Choose any of the above courses to earn a minimum of 3 quarter credit hours.**

## Music

**Minor Adviser: Carl Atkins**

The music 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\***—Four credits (four quarters) must come from participation in one of these ensembles. Up to an additional four ensemble 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 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.*

## Music and Technology

**Minor Adviser: Tina Lent**

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

### Electives—Choose one of the following courses:

- 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 courses:

- 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 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.*

## Networking and System Administration

**Minor Adviser: Sylvia Perez-Hardy**

The minor in networking and system administration features a sequence of courses that provides students with a firm foundation in networking and/or systems administration. Computer networks and the systems attached to these networks have become ubiquitous. Therefore, knowledge of how computer networks work, 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 courses:

- 4050-402 OS Scripting
- 4050-521 Perl for System Administration

### Required Courses:

- 4050-351 Network Fundamentals
- 4050-421 System Administration I
- 4050-515 Introduction to Routing and Switching

### Electives—Choose one of the following courses:

- 4050-413 Applications of Wireless Networks
- 4050-516 Network Services

## Optical Sciences

**Minor Advisers: Zoran Ninkov or Michael Kotlarchyk**

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 courses:

- 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 courses:

- 1017-556 Laser Physics
- 0609-511 Laser Technology
- 1051-370 Radiometry

**Detectors**—Choose one of the following courses:

- 1051-465 Detectors
- 1051-528 Design and Fabrication of a Solid State Camera

**Electives\***—Choose two of the following courses 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)
- 2076-454 Holography I

*\*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

**Minor Adviser: Thomas Voss**

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 courses:

- 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 Military and 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

**Minor Adviser: Jack Sanders**

The philosophy minor provides basic competency in a variety of areas of philosophical inquiry and develops 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.

**Required Course**—Choose one of the following courses:

- 0509-444 Great Thinkers
- 0509-449 Special Topics
- 0509-450† Seminar in Philosophy

**Electives**—Choose four of the following courses:

- 0509-440 Philosophy of Religion
- 0509-441 Logic
- 0509-442\* Philosophy of Art/Aesthetics
- 0509-443# Philosophy of Science
- 0509-445§ Social and Political Philosophy
- 0509-446 Philosophy of Law
- 0509-447 Contemporary Moral Problems
- 0509-448 Philosophy of Peace
- 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 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

\*Prerequisite: One previous philosophy course or consent of instructor is strongly encouraged.

\*\* Prerequisite: One previous philosophy course or consent of instructor

## Physics

**Minor Adviser: James R. Kern**

Students will 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 courses (at least one must come from Group A and at least one must come 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

**Minor Advisers: Paul Ferber and John Murley**

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
- 0513-441 Politics in China
- 0513-443 Politics of Russia and the Newly Independent States
- 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 Middle East Peace Process
- 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 Legislative Process
- 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
- 0513-482 African-American Politics
- 0513-485 Politics through Fiction
- 0513-514 Political Theory

## Print Media

### **Minor Adviser: Barbara Birkett**

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 Course Description catalog.

### **Advertising and Media Strategy**

- 2080-592 Marketing and Sales
- 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
- 2083-316 Web Page Production
- 2082-337 Digital Asset Management
- 2083-412 Digital News Systems Management
- 2082-313 Media Distribution and Transmission
- 2083-402 Media Law
- 2082-228 Multimedia Publishing
- 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 Finish 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
- 2082-228 Multimedia Publishing
- 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 Finish 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

### **Minor Adviser: Andrew Herbert**

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 courses:**

- 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

**Minor Adviser: Ann Howard**

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 follow one of two tracks within the public policy 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 course prerequisites.

### **Policy Issues Track**

#### **Required Courses:**

- 0521-400 Foundations of Public Policy  
Plus one of the following courses:  
0521-460 Capstone: Public Policy Minor  
0508-530 Seminar in Science, Technology, and the Environment

#### **Electives—Choose three of the following courses:**

- 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  
0521-406 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

## Science, Technology, and Policy

**Minor Adviser: Franz Folz**

The purpose of this minor is to provide students with both breadth and depth in the field of science and technology policy. The minor allows students to make connections between public policy and other scientific and technical fields. The minor explores contemporary science and technology policy issues and will give students 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 courses:**

- 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\***

- 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  
0508-487 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.*

## Science, Technology, and Society

**Minor Adviser: Deborah Blizzard**

This minor integrates the study of human society and science and technology in their social content and context. The minor bridges the humanities and social sciences to better understand 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 Society
- 0508-447 Special Topics
- 0508-451 Cyborg Theory: (Re)Thinking the Human Experience
- 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

## Science Writing

**Minor Adviser:** *Lisa Hermsen*

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 serves as a professionally marketable complement to a number of degree programs in the College of Science, the Kate Gleason College of Engineering, the College of Applied Science and Technology, and a number of 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 courses:**

- 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

## Service Management

**Minor Advisers:** *Carol Whitlock and Jayne Downes*

Delivering exceptional customer service experiences is an important strategic component of all business enterprises in both 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

**Minor Adviser:** *Paul Grebinger*

This minor in sociology and anthropology examines the changing interrelations between work, technology, and culture in different nations across the globe. With the globalization of the workforce, our trade, production, and 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 courses:**

- 0510-210 Cultural Anthropology
- 0515-210 Foundations of Sociology

**Electives—Choose five of the following courses:**

- 0508-491 Sustainable Communities
- 0510-440 Cultures in Globalization
- 0510-443 Immigrants in the U.S.
- 0510-444 Social Movements in the Global Economy
- 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 Gender and Sexuality
- 0510-452 Bodies and Culture
- 0510-453 Culture and Expression
- 0510-454 Visual Anthropology
- 0510-457 Divided Europe
- 0510-459 Cultural Images of War and Terror
- 0510-502 Archaeology and the Human Past
- 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

## Software Engineering

**Minor Adviser: J. Fernando Naveda**

The software engineering minor is designed to provide 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 who opt for this minor 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. The minor requires a total of five courses (20 quarter credit hours).

### Required Courses:

4010-361 Introduction to Software Engineering  
4010-362 Engineering of Software Subsystems  
4010-456 Software Engineering Process

**Elective Courses**—Subject to having the proper prerequisites, students must 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

**Minor Adviser: James Halavin**

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 be courses that are not 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.

1016-314 Engineering Statistics I  
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

**Minor Adviser: John Morelli**

The structural design 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 courses:

0608-470 Timber Design  
0608-497 Structural Steel Design  
0608-305 Structural Computer Applications  
0608-496 Reinforced Concrete Design

## Sustainable Product Development

**Minor Advisers: Andres Carrano and Brian Thorn**

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.

### Prerequisites:

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 courses (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

#### Minor Adviser: Warren Koontz

A telecommunications minor is available for undergraduate students in any of the eight RIT colleges 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 courses:

- 0614-475 Switching Technologies
- 0614-479 Network Management
- 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

#### Minor Adviser: Roger Freeman

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 to create 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 Theater Arts elective 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 drama and theater-related elective courses:**

- 0504-440 Drama and Theater
- 0504-450 Ibsen: Family and Society
- 0504-454 Shakespeare: Tragedy/Romance
- 0504-455 Shakespeare: Comedy/History
- 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

### Web Development

#### Minor Adviser: Daniel Bogaard

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

### Web Design and Development

#### Minor Adviser: Ronald P. Vullo

The minor in Web design and development is designed 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.

**Prerequisites:** None

**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

## Urban and Community Studies

**Minor Adviser:** Paul Grebinger

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 courses:**

- 0515-210 Foundations of Sociology
- 0510-210 Cultural Anthropology

**Required course:**

- 0515-442 The Urban Experience

**Electives—Choose four of the following courses** (at least one course must be from urban policy and one must be from urban issues.)

### Urban Policy

- 0515-413 Urban Planning and Policy
- 0526-441 GIS Applications in UC Studies
- 0511-440 Urban Economics
- 0508-491 Sustainable Communities I
- 0526-443 Rochester: People, Politics, and Planning

### Urban Issues

- 0510-445 Global Cities
  - 0515-485 Diversity in the City
  - 0510-443 Immigrants in the U.S.
  - 0501-405\* Major Issues: Crime/Justice in the Community
- \*Major Issues: Crime/Justice in the Community (0501-405) has a number of sections offered. Students in this minor may enroll only in section 02 (Crime/Justice in the Community).

## Women's and Gender Studies

**Minor Adviser:** Tina Lent

The women's and gender studies minor is an interdisciplinary, multicultural series of courses that 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's and Gender Studies

**Electives—Chose four of the following courses:**

- 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 Gender and Sexuality
- 0522-452 Bodies and Culture
- 0522-453 Economic Role of Women
- 0522-459 Toni Morrison
- 0522-460 Special Topics\*
- 0522-480 Women and the Visual Arts
- 0522-481 Women in Literature
- 0513-482 Women in Politics
- 0522-483 Psychology of Women
- 0522-484 Autobiography
- 0522-492 Native American Women's Experience
- 0525-543 Women in the Hispanic World: Politics of Identity Formation

**Affiliated Electives—Choose one of the following courses:**

- 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 topics: Traumatic Images, Queer Looks II, Art of Dying, or Contemporary Women's History.

## Writing Studies

**Minor Advisers:** Elizabeth Mazzolini

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

## Experiential learning

---

[www.rit.edu/co-op/careers](http://www.rit.edu/co-op/careers)

**(585) 475-2301 (voice), (585) 475-6905 (TTY)**

At RIT, students earn an outstanding education. But to be prepared for the challenges students 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 cooperative education—paid work assignments with corporations and organizations around the U.S. and abroad.

## Cooperative education

Cooperative education (co-op) is the most extensive and intensive of RIT's experiential education opportunities. Co-op is full-time, paid work experience directly related to students' course of study and career interests. Many academic programs require co-op while others make it an option. Other programs feature internships and other work experience consistent with industry and business interests and needs.

Co-op is the best way for students to immerse themselves in the real world and apply what they've learned and experienced while at RIT. The benefits of participating in co-op and other experiential education opportunities are many. Students can:

- better clarify and focus their career interests.
- gain valuable workplace and work-related experience.
- make important industry contacts and build a professional network.
- generate significant earnings to help offset college expenses.

## 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. Study abroad programs led by RIT faculty are in most cases offered in the summer, although a few are offered during the quarter. Many programs—including a program at RIT's campus in Dubrovnik, Croatia, and intensive language study programs in Japan, Germany, and Italy—offer credit toward liberal arts requirements. Other programs are offered in environmental science (Galapagos Islands and Baja, Mexico) and photography (Brazil and Oaxaca, Mexico, Design in Dessau, Photo in Dubrovnik, and Film in Paris).

Through affiliation agreements with other institutions, RIT also offers students the opportunity to enroll in study abroad programs in many locations around the world while receiving RIT credit and financial aid. Affiliations such as those with Syracuse University, the State University of New York at Oswego in Germany, the Budapest Semesters in Mathematics Program, the Denmark International Studies Program, Queen's University in Sussex, the School for Field Studies, New York University, Arcadia University and Siena School (for deaf signing students only) enable students from every major to find a study abroad program that meets their needs. Program locations include the United Kingdom, Ireland, Italy, France, Denmark, Germany, Spain, Hungary, Greece, Costa Rica, Mexico, the Turks and Caicos Islands, Kenya, Equatorial Guinea, Ghana, Czech Republic, Hong Kong, Singapore, Australia, China, and New Zealand.

For more information about study abroad, contact the Study Abroad Office in Academic Enhancement Programs, Bldg. 13, Room 1314, telephone (585) 475-4466; fax (585) 475-7633; e-mail [studyabroad@mail.rit.edu](mailto:studyabroad@mail.rit.edu) [goabroad@rit.edu](mailto:goabroad@rit.edu); website <http://studyabroad.rit.edu>.

## Undergraduate research

---

[www.rit.edu/research/](http://www.rit.edu/research/)

Research is about solving problems, and RIT recognizes that many of the best careers require strong research skills. RIT provides a wide variety of undergraduate research opportunities—from working on research projects sponsored by business, industry, government agency, or RIT; an original research project in collaboration with a faculty member; to facilitating applied scientific, engineering, or market research in a corporate or industrial setting, 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:

- *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 multidisciplinary 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.
- *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.

The RIT Undergraduate Research Symposium honors RIT student research achievement—hosting more than 90 presentations from across the campus each year by undergraduate students who have conducted research with faculty members.

## Honors program

---

<http://honors.rit.edu>  
(585) 475-4466

The RIT Honors Program provides a supportive and encouraging environment for students of intellectual curiosity and academic distinction. Students benefit by working closely and sharing academic experiences with other honors students and faculty, both in and out of the classroom.

Designed around three basic ideals of leadership, scholarship, and citizenship, the Honors Program is 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
- hope 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. The 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 in the College of Liberal Arts and College of Science.
- Research and experiential learning—The Honors Program offers opportunities to work with faculty on applied and interdisciplinary research projects.

- Honors advising—Each college has designated an experienced faculty 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 study abroad 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 expected to participate in the honors courses and co-curricular activities in their college and replace approximately half of their liberal arts requirements with honors courses. Honors students are also required to participate in 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 grade point average and other requirements.

**Admission:** Applicants who submit RIT's Application for Undergraduate Admission (or the Common Application) by February 1 are admitted 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 normally 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.

For more information about the Honors Program, contact the Office of Academic Enhancement Programs, Bldg. 13, Room 1314, telephone (585) 475-4466; fax (585) 475-7633; e-mail [aep@mail.rit.edu](mailto:aep@mail.rit.edu); website <http://honors.rit.edu>.

## Accelerated dual degree options

---

RIT offers a number of dual degree programs where a student can earn a BS degree and an MS or ME degree in less time that it takes to do each program separately. The following is a list of approved dual degree programs:

### 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  
BS/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 Materials Science

## 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/MS in Physician Assistant\*  
BS in Physics/MS in Materials Science and Engineering  
BS in Polymer Chemistry/MS in Chemistry

\*pending NYS approval

## 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.

## 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://online.rit.edu>

**(585) 475-5896 (V/TTY)**

A recognized leader in the delivery of online asynchronous (any time, anywhere) education, RIT began offering online education in the late 1980s and offered its first full degree in 1992.

RIT offers 45 graduate, undergraduate, and certificate programs and, in addition, several hundred courses online each year. Students are encouraged to select and apply to an academic program but may enroll in courses without being a matriculated student.

All courses offered online meet the same rigorous objectives set for traditional classroom experience. Faculty members who teach an online course 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 style and goals exist in the online classroom. Most classes establish a weekly schedule for learning activities or a project-based learning

approach with deliverables due after certain outcomes have been accomplished. These may include projects, exams, team-based projects, required asynchronous discussion, or building/using computer programs to demonstrate capabilities. Most classes also include required readings from textbooks, electronic reserves (from the library), Web pages, or downloadable documents (PDFs). Students interact with one another online to exchange ideas and collaborate.

All courses use Internet and Web-based technologies for the underlying course structure. Students log in frequently during the week and must have unrestricted access to the Internet, a computer, a telephone, a VCR, and a TV monitor to participate in courses. Not all courses use the same technologies; some will take advantage of toll-free phone conferences, while others will use text-based chat. Others utilize CD-ROMs. Some use Web-based simulations, and some may require additional software.

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, quarterly orientation, access to student records, and online ordering for all course materials through the campus bookstore. Registration can also be completed via the RIT Information Center/SIS, touchtone telephone, fax, and mail.

RIT Online Learning serves students throughout the United States and in more than 40 countries. Those living near Rochester can choose to take both online and traditional courses as a way of increasing flexibility and remaining on target to completing a degree.

For more information, see Online Learning at <http://online.rit.edu> or call us at 1-800-CALL-RIT (V/TTY), (585) 475-5089 or (585) 475-5896 (V/TTY).

## **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 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 Genesee
- 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 toward 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.

# 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, it 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 more 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 United States 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.

## 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/](http://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 telephone, fax machine, or mail. The registration period ends with the first six weekdays of the term, also called the add/drop period. Specific dates and procedures can be found in the quarterly Schedule of Courses booklet. 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 sixth 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 sixth 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, page 6). 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

1. 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.
2. 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.
3. Any student whose program quarterly grade point average falls below 1.00 will be suspended.
4. 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**

---

Based on an average of the three most recent cohort survival statistics, RIT's student graduation rate is 63 percent for students entering at the first-year level and graduating from a four- or five-year program.

Excluding part-time and non-degree students, 89 percent of first-year, full-time day students register for their second year. The statistics reported herein have been computed in a manner consistent with data reported to the New York State Department of Education through the university's Office of Institutional Research and Policy Studies.

## **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 dean(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**

RIT recognizes that 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 cover-

ing the awarding of credit for Advanced Placement examinations is reviewed annually and may be subject to change.

## **International baccalaureate**

RIT recognizes that 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.

# Student Services

## Academic Support Center

---

[www.rit.edu/asc](http://www.rit.edu/asc)

(585) 475-6682 (tty)

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 office offers courses 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.

**College Restoration Program (CRP):** CRP is an intensive academic intervention program for students facing academic suspension. Designed to support our academic departments, CRP employs a structured, holistic approach to teach students the skills, strategies, and behaviors necessary for academic success. Eligible students must be referred by their academic department and must complete an application online. Diagnostic testing helps determine a program of study that addresses the most salient obstacles to a student's success in the RIT environment.

Once a student is accepted into CRP, he or she is classified as part-time matriculated for that quarter. While in CRP, the student pursues an individualized program of study that includes CRP non-credit courses and one or two credit-bearing courses. In addition, each student meets weekly with an ASC faculty member who serves as the student's mentor and adviser. CRP focuses on student development with emphasis on self-awareness, self-appraisal, self-discipline, and self-regulation. Students must be willing to modify their behavior in order to effect positive change.

**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:** Formerly Learning Support Services, 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. LSS 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 ASC math program supports students' progress in learning mathematics. The ASC Math Lab is a drop-in tutoring center staffed with peer tutors and ASC faculty. Math lab tutors can help RIT 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 at (585) 475-6682 (voice/TTY).

**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 include 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, we offer tutor training workshops 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](http://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.

## Cooperative Education and Career Services

---

[www.rit.edu/co-op/careers](http://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 RIT students and alumni. Such services empower them to succeed in obtaining employment or continuing their studies as appropriate to their career objectives and personal goals.

Among the many experiential education opportunities offered by RIT, the university is perhaps best known for its cooperative education program. Initiated in 1912, RIT's program is one of the oldest and largest in the world. More than 1,900 employing organizations across the country and around the world participate annually in the program, hiring more than 3,600 RIT 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:** Program coordinators in the office support specific academic units and are available to meet on a one-to-one basis with students and alumni on career development and employment matters. These sessions are critical in developing individual job search plans and addressing the many questions and issues that arise during the job search process. Staff members are available by appointment or on a walk-in basis.

RIT deaf and hard-of-hearing bachelor's-level students may work with the staff of the NTID Center on Employment in addition to program coordinators in Co-op and Career Services.

**Workshops/Information Sessions:** The staff 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 much more.

**Career and Employment Resources:** Career and employment information is available through the office's state-of-the-art website. Informational handouts and materials are provided online in addition to hard copy, and useful employment and career development services and sites are highlighted for students. RIT makes available, for example, student access to subscription online databases such as CareerSearch and Universum/Wet Feet.

**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 resume, search the database of employment opportunities, and apply to a position with a simple click of the mouse.

**Ongoing Communication:** The office communicates regularly

with student users through e-newsletters, list-serves, e-mails, and a customized student website portal.

**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.

**Grad School Advising:** Information and personalized advising concerning selecting and applying to graduate schools is also available through the office with dedicated services and staff to assist in the process.

**Mentor Program:** RIT's Career Mentoring Program is a joint initiative of the Offices of Cooperative Education and Career Services and Alumni Relations. Through the program, RIT alumni and friends volunteer to mentor current students in the areas of career exploration and information.

## Counseling Center

---

[www.rit.edu/counseling](http://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. Although not uncommon, 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, to develop new life skills, and to explore and gain insight, understanding and acceptance.

The Counseling Center's staff of professional counselors and psychologists are committed to helping you explore and deal with your problems. Counselors work with students whose concerns range from the everyday challenges of university life to more disruptive psychological concerns. All services provided by the Counseling Center are free to eligible RIT 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 of being 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.

**RIT Counseling Center hours:**

Monday – Friday: 8:30 a.m. - 4:30 p.m.

\* Wednesday and Thursday: 4:30 p.m. - 7:00 p.m.

*\* By appointment only during fall, winter and spring quarters*

**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 Counseling Center and identify the situation as an emergency. If you or someone else is in physical danger, call Public Safety: (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 RIT Counseling Center, career exploration resources include occupational information on a variety of careers, vocational and educational reference books, and the career guidance system, DISCOVER. The center and its resources are available on a walk-in basis.

DISCOVER uses a computers to help students learn more about:

- the career planning and decision-making process;
- themselves, especially their interests, abilities, and work-related values;
- careers that may be appropriate based on interests, abilities, and values;
- the world of work, including descriptions of more than 40 occupations, and
- graduate and professional school opportunities.

**Confidentiality:** All counseling services are confidential. The Counseling Center will not release information about students without a student's written permission except where required by law, as required to protect the student or others from physical danger, or upon court order (an extremely rare occurrence).

**Making an initial appointment:** Scheduling an intake appointment is quite easy. Simply call (585) 475-2261 or stop by the Counseling Center. During the initial visit, which lasts 45 – 60 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 Counseling Center, students will be informed as to how they will be contacted for subsequent appointments. 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](http://www.rit.edu/dso)

**(585) 475-7804 (voice/TTY)**

**(585) 475-6988**

RIT is committed to providing students with disabilities with equal access to programs, services, and physical facilities and to

fostering an environment where students and faculty/staff with disabilities are welcomed, valued, and respected. Students with disabilities who would like to request accommodations are asked to submit a Request for Accommodations form and appropriate documentation of the disability to the Disability Services Office. The request form can be found online or requested from the Admission or Disability Services offices. A director will: 1) review the student's request for accommodations and documentation; 2) recommend appropriate and reasonable accommodations, as needed; and 3) refer students to the appropriate service providers, as needed.

## English Language Center

---

[www.rit.edu/studentaffairs/elc/](http://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 English Language 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 English Language Center offers a program in which international students give private and group lessons in their native languages. The international student is supervised by a trained language instructor, who assists in curriculum development and provides language teaching methodology. 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 or pick up an application at 1301 Eastman.

**Translation service:** The English Language Center's translation service provides quick and efficient translation of documents, reports, letters, and manuals for RIT students, faculty, and staff as well as businesses in the Rochester area. For a fee, documents of all types, general to technical, can be translated.



## Educational Technology Center

---

<http://www.rit.edu/academicaffairs/etc/>

**(585) 475-2551**

The Educational Technology Center (ETC) provides services that enhance and support the educational environment. ETC's media production service produces educational and informational media for faculty and staff. These include video, multimedia/Web, graphics, and photography/digital imaging production. Media production services also captions video and other digital media.

The classroom learning technologies department deals with many aspects of classroom technology. Support covers the delivery and setup of projectors (slide, overhead, and video/data) as well as TV/VCR/DVD carts; access to and training on installed classroom equipment, and the operation of equipment in academic auditoriums. ETC also supports the installation and maintenance of computer and video projection equipment and podiums in classrooms and lecture halls. Instructional services provides equipment and technical support to RIT student clubs and organizations.

The Media Resource Center provides media support to faculty, staff, and students. Staff work with faculty to identify media within the collection and locate new media to support curriculum needs. The collection consists of a variety of media formats, including videotape, DVD, audiotape, and an art history slide collection. The various media formats are available for use in the classroom or the center's viewing area. Requests for captioning RIT-owned media (ETC or department collections) are coordinated by the center's staff.

ETC arranges an array of communication feeds including webcasts and satellite downlinks.

ETC is located on the lower level of Wallace Library. More than 70 students assist with production, classroom technology support, and office duties. Individuals are invited to drop in and explore these resources.

## Financial Aid and Scholarships

---

[www.rit.edu/emcs/financialaid/](http://www.rit.edu/emcs/financialaid/)

RIT's 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 RIT undergraduate and graduate students receive over \$200 million dollars 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/](http://www.rit.edu/studentaffairs/fye/)

**(585) 475-7033**

First-Year Enrichment (FYE) is a program designed to enhance the personal, academic, and professional success of first-year students and to facilitate their academic and social integration into RIT. This required 2-credit, two-quarter interactive course is designed to maximize the student's potential to achieve academic

success and to adjust responsibly to the personal and interpersonal challenges presented by collegiate life.

FYE actively engages students during their critical transition to college by examining problems and issues common to first-year students. The course is customized for each college at RIT, integrating needs specific to students in each major into a classroom experience that includes awareness of diversity, time management, academic success strategies, student finances, ethical decision making, goal setting, information literacy, copyright infringement and plagiarism, RIT resources, and more.

Coaching is a one-to-one interaction between the student and instructor that occurs over the course of the first year at RIT. Individual coaching appointments are provided by each FYE instructor to assist students with transitional issues, help them establish academic and personal development goals, encourage their involvement in campus activities, and foster connections with their academic program and college.

**Course Descriptions:** FYE incorporates a two-course sequence required of all first-year students. Students receive one quarter credit for the successful completion of each of the two required courses, First-Year Enrichment I (1720-050 or 1720-051) and First-Year Enrichment II (1720-052 or 1720-053). First-year transfer students who have completed successfully the equivalent of two full-time quarters (24 quarter credits) at an accredited institution of higher education and/or a comparable transition course, and students who are at least 20 years of age, may request exemption from the FYE requirement from the director of FYE.

### 1720-050, 051 First-Year Enrichment I

The first part of the two-quarter First-Year Enrichment series is a survey course with an integrated coaching component that is designed to enhance the academic, personal, and professional success of first-year students and facilitate their academic and social integration into RIT. Credit 1

### 1720-052, 053 First-Year Enrichment II

The second course and coaching experience in the two-quarter First-Year Enrichment series is designed to reinforce principles introduced in FYE I and advance the development of skills that lead to academic and personal success at RIT. Credit 1

## Graduate Enrollment Services

---

[www.rit.edu/grad](http://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/](http://www.rit.edu/studentaffairs/heop/)  
**(585) 475-2221 (voice/TTY)**

The Arthur O. Eve Higher Education Opportunity Program (HEOP) is a New York state- and RIT-funded service that provides qualified students with additional financial and academic support for up to five full years, not including periods during which students may be enrolled in cooperative education. While both New York and RIT provide financial support, HEOP students must also qualify for the New York state Tuition Assistance Program (TAP) and federal Pell Grant program and be personally responsible for loan and college work-study contributions. The HEOP program is dedicated to each individual student's academic success and personal growth.

To qualify, prior to attending college, students must meet strict academic and financial guidelines set by the state Education Department. Students must have graduated from high school or the equivalent and be New York state residents. Transfer students are eligible if they are coming from a like program at another institution in the state: HEOP, EOP, SEEK, or College Discovery. Transfers must apply to and be accepted by both the HEOP office and the Admissions office for entrance. Space in the program is limited.

Services for all students include personal, academic, financial, and career counseling. Tutoring is available in all subjects, and the HEOP staff act as campus resources and advocates. Students accepted as freshmen must attend a four-week summer program prior to fall quarter entrance. They live on campus and attend a selection of skills-building classes designed to facilitate their entry into standard RIT courses.

Named in 2007 in honor of retired State Assemblyman Arthur O. Eve, HEOP has existed on the RIT campus for almost 40 years. Across the state, the HEOP program has been applauded for its graduation rate. Inquiries should be directed to (585) 475-2221 (voice/TTY).

## International Student Services

---

<http://www.rit.edu/studentaffairs/iss/>  
**(585) 475-6943 (voice/TTY)**

International Student Services is the primary resource for more than 1,500 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.

## Information and Technology Services

---

[www.rit.edu/its/](http://www.rit.edu/its/)  
**(585) 475-4357**

Computing and network services at RIT are provided by Information and Technology Services (ITS).

### Wireless, portal, and more

The campus-wide network includes wireless capabilities in open public areas such as the Student Union, Crossroads Café, Wallace Library, and every college. Popular features are e-mail and access to the Internet, including Internet 2, a second-generation Internet technology with increased broadband capabilities for better access to digital libraries, scientific instruments, and other research applications. Many faculty members have incorporated these features into their curricula.

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 campuswide use of all computers and networks. This document, found online at [www.rit.edu/computerconduct](http://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. In addition ITS provides anti-virus software free of charge to all students, faculty, and staff.

### 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](http://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](http://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](http://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](mailto:resnet@rit.edu), or visit <http://resnet.rit.edu>.

### **Contacting the HelpDesk**

The ITS HelpDesk is located in room 1113 of the Gannett Building. Contact HelpDesk staff via telephone/TTY, e-mail, or the Internet:

(585) 475-HELP (4357)

(585) 475-2810 (TTY)

E-mail: [helpdesk@rit.edu](mailto:helpdesk@rit.edu)

Online: [www.rit.edu/its/help](http://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

### **RIT libraries**

[library.rit.edu](http://library.rit.edu)

The RIT libraries are comprised of four separate entities, Wallace Library, the Cary Collection, RIT Archive Collections, and The Lab for Social Computing. Recently added resources include the RIT Museum and the Lawson Center, home to the RIT Cary Graphic Arts Press.

Wallace Library is a high-technology, multimedia resource center and is the main library on campus. Its vast information resources are conveniently available via the Internet, which provides access to a wide selection of current electronic resources in Web-based and text formats. Users can easily access the library's online catalog, search electronic databases, and surf the Internet. The staff offers hands-on instructional sessions for using various resources, and specialized class instruction can be scheduled upon request. Reference librarians are available during the week and on weekends to provide individual assistance at the RE:SEARCH ZONE, while in-depth assistance also is available by appointment. The Publishing and Scholarship Support Center provides one-stop service for advice and assistance in preparing research, articles, books, and other documents for publication.

Videotapes (VHS) and DVDs can be checked out at the circulation desk. Audio books and wireless laptop computers also are available. Information Delivery Services (IDS) manages inter-library loans and patrons can request materials online through IDS Express. ConnectNY is a service that makes available the combined resources of a large consortium of academic libraries in New York state. Online requests usually are fulfilled within 48 hours. The combined collection of ConnectNY member institutions exceeds 3 million items. The Rochester Regional Library Council's Access program allows patrons to obtain a library card that offers access to other area libraries, including those of the University of Rochester and the State University of New York colleges in Geneseo and Brockport.

The Idea Factory is a multipurpose room featuring The Soap Box, a coral reef aquarium, and modular study tables. Special events are frequently held here, offering educational and recreational programs throughout the academic year. The Idea Factory is adjacent to Java Wally's café, a favorite spot for anyone interested in relaxing, studying, or meeting in an informal setting. The Book Nook features a constantly changing array of books on various topics of interest. Additional recreational reading material is available in the library's Leisure Collection.

The VIA Lab provides access to numerous state-of-the-art workstations, image scanning, and color copying. 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. The archives are housed in a temperature- and humidity-controlled environment that supports the preservation of paper and photographs. The RIT Archive Collection 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. For Library hours, call (585) 475-2046 (voice); for the RE:SEARCH ZONE, call (585) 475-2563 (voice/TTY) or (585) 475-2564 (voice). The circulation desk can be reached at (585) 475-2562 (voice) and (585) 475-2962 (TTY).

### **Margaret's House**

[www.rit.edu/studentaffairs/margarethouse](http://www.rit.edu/studentaffairs/margarethouse)

**(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/](http://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 one week, 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.

## North Star Center for Academic Success and Cultural Affairs

---

[www.rit.edu/studentaffairs/northstar/](http://www.rit.edu/studentaffairs/northstar/)  
**(585) 475-4704 (voice/TTY)**

The North Star Center for Academic Success and Cultural Affairs improves student retention and graduation rates of African American, Latino American, and Native American (AALANA) students at RIT. In the best ideals of Frederick Douglass, the center promotes the moral and intellectual development of all RIT students through cultural awareness and affirmation, creating an ethnically and racially diverse environment—a microcosm reflecting the knowledge, skills, character, and culture needed for future civil society.

In support of its mission, the center provides services and develops initiatives to enhance the AALANA student experience, in addition to providing personal advising, advocacy, leadership development opportunities, diversity education, cultural programming, and a connection to campus and community resources. The center combines the resources of the Academic and Student Affairs offices, expanding the concept of student development to include development of the total student, while attending to academic excellence first and foremost.

The North Star Center staff members create a supportive environment for academic success. They interact on a daily basis with faculty, academic advisers, Student Affairs, and social organizations. Essentially, they are knowledgeable about all aspects of a student's college, academic support services, degree requirements, and social life.

The center brings prominent speakers and community leaders to campus to meet with students, faculty, and staff; disseminates information to students and families about internships, scholarships, and job opportunities; and advises the AALANA Major Student Organization, the Black Awareness Coordinating Committee, the Latin American Student Association, LaVoz,

the National Society of Black Engineers, the Society of Hispanic Professional Engineers, and other student groups.

## NTID resources

---

[www.ntid.rit.edu/](http://www.ntid.rit.edu/)

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](http://www.ntid.rit.edu/nlc)

The NTID Learning Consortium is a partnership among academic departments and educational programs throughout NTID and RIT. 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 NTID Learning Consortium 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/nlc/sil/](http://www.ntid.rit.edu/nlc/sil/)

NTID's Self-Instruction Lab (SIL) supports American Sign Language and spoken language skill development. The SIL serves students, faculty, and staff, as well as the greater Rochester community. Improving and maintaining communication and language skills requires drill and practice. The SIL offers resources for practicing both expressive and receptive communication skills within a self-instruction format. These resources include materials related to speechreading skills, listening skills, American Sign Language, Spanish, cultural and creative studies, and English.

SIL workstations are equipped so that learners can use instructional videotapes, Macintosh and PC computer programs, CD-ROMs, DVDs, and audio resources. Many of the lab's materials are designed to supplement classroom instruction but may also be used for independent practice and study.

The SIL also offers two video production rooms where learners can record themselves individually or interacting with another person using split-screen technology. There is also a flex cam available in the SIL itself for making video recordings.

### **Communication studies and services**

[www.ntid.rit.edu/current/css.php](http://www.ntid.rit.edu/current/css.php)

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 videotape 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 Building, 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/current/counseling\\_index.php](http://www.ntid.rit.edu/current/counseling_index.php)

**(585) 475-6597 (voice), (585) 286-4540 (VP)**

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. They also assist in coordinating special services for students with secondary disabilities.

### **NTID mental health services**

**(585) 475-2261 (voice), (585) 475-6897 (TTY)**

**(585) 475-3333 (after hours)**

The RIT 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 (SLT) 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 SLT emphasizes cultural diversity, minority student support, leadership development, deaf culture and ASL, and contemporary social issues.

### **NTID Center for Intercollegiate Athletics and Recreation Support Team** **(585) 475-6104 (voice), (585) 475-6530 (TTY)**

[www.ntid.rit.edu/sports/overview.html](http://www.ntid.rit.edu/sports/overview.html)

The NTID Center for Intercollegiate Athletics and Recreation (CIAR) support team is committed to providing quality services that maximize access for deaf and hard-of-hearing students engaged in Wellness Education courses, intercollegiate athletics, intramurals, and recreation programs.

Support team members teach Wellness Education courses, signing for themselves. They also provide programs and consultation for deaf and hard-of-hearing intercollegiate student-athletes and coaches. Athletes are provided recognition and support through special sponsored events. Collaboration with the NTID Admissions Office allows potential deaf and hard-of-hearing student athletes the opportunity to meet with members of the support team and RIT intercollegiate coaches and visit athletic facilities. Advising and mentoring are provided to students involved in the Deaf Basketball Association and RIT/Gallaudet Weekend events.

Opportunities for deaf and hard-of-hearing students to develop leadership and professional skills occur through the peer educator/paraprofessional program under the direction of the NTID CIAR support team. The student paraprofessionals utilize a variety of innovative strategies and programming efforts that support student access, inclusion, team building, and education.

### **NTID Summer Vestibule Program**

[www.ntid.rit.edu/prospective/svp.php](http://www.ntid.rit.edu/prospective/svp.php)

The Summer Vestibule Program (SVP) 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 SVP, 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 SVP does not automatically guarantee admission to the program the student selects. The final decision on acceptance into a program of study for the fall quarter is the responsibility of each academic department. Admission to a program depends on successfully completing SVP, having requisite skills to begin the program, and availability of space in that program.

During SVP, 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 SVP.

### **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.

### **Part-time Enrollment Services**

[www.rit.edu/parttime](http://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.

### **Student Health Center**

[www.rit.edu/studentaffairs/studenthealth](http://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, 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 7 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 2165 requires that all students enrolled for more than four quarter credit hours in a term and born after January 1, 1957, must provide the RIT Student Health Center with 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, 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. RIT requires that these immunizations be given in two doses of combined MMR vaccine given at least 30 days apart. Failure to comply with the NY State Immunization Law may lead to exclusion from classes and the RIT community until compliance is obtained.

RIT requires all students under 26 years of age to be immunized against meningitis (meningococcal disease). Other immunization requirements include Hepatitis B, DPT, polio, 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 is available from the Student Health Center. Additional detailed immunization information is available on the center's website or by calling (585) 475-2255.

## **Student Financial Services**

---

<http://finweb.rit.edu/sfs/>

**(585) 475-6186**

Student Financial Services (formerly the Bursar's Office) offers a variety of financial services for students, including billing, payment options, and loan repayment. The office has implemented an e-mail/Web-based system called eServices for RIT billing and payments. This facilitates online, real-time account inquiry and electronic payment. Each student's RIT e-mail account will be the official address through which notification will be made regarding billing.

## **TRiO Student Support Services**

---

[www.rit.edu/studentaffairs/trioss](http://www.rit.edu/studentaffairs/trioss)

**(585) 475-2833**

TRiO Student Support Services is a federally funded program that provides the academic and personal support that will enable students who qualify to realize their potential and to graduate. SSS has been hosted at RIT for more than 30 years and includes academic, counseling, and programming components. Each has a distinct purpose but is integrally linked with the others.

The academic component offers a full complement of services—including tutoring, math mentoring, advisement, and skills development—to assist students with academic concerns, enable them to understand and refine their learning process, and use academic resources more effectively.

The counseling component works to bring students into the program and provides support that enables them to direct their energies toward their academic and personal goals. A counselor assists students in understanding all resources available and how to access the appropriate assistance. A counselor also will work with students on areas of general concern.

The programming component provides complementary experiences that enhance the student's academic and personal perspectives by drawing on RIT and other community resources. This component can provide the student with new opportunities for personal and professional growth.

To qualify for the program, students must meet one of the following criteria: financial eligibility, documented disability, or first-generation college student status. Any full-time undergraduate student who is a U.S. citizen or has a green card and meets one of the eligibility requirements may become a member of RIT TRiO Student Support Services.

## Veteran Enrollment Services

---

[www.rit.edu/emcs/ptgrad/veterans.php3](http://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 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 Part-time Enrollment Services. To ensure a smooth transition and successful academic program completion, start your benefits paperwork early.



# The RIT Community

Among the nation's top universities, RIT is an exciting living and learning environment. Within our engaging and challenging academic setting, you'll find a strong commitment to undergraduate education and a vibrant campus life that creates sparks of creativity and community. Students from all 50 states and more than 100 countries find the RIT campus and Rochester, N.Y., crackling with life.

## Center for Residence Life

---

[www.rit.edu/reslife](http://www.rit.edu/reslife)

The Center for Residence Life serves the needs of approximately 6,800 students in residence halls, Greek houses, special-interest houses, lifestyle floors, the RIT Inn and Conference Center, and on- and off-campus 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 center's residence halls offer a comprehensive campus living experience.

The center 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.

### 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 and special-interest houses provide additional options for a more personalized living environment.

Special-interest houses are designed for students to share their mutual interests. Seven houses offer a specific academic focus and provide a way to tailor activities to a common group. Special-interest houses are self-governing organizations with a resident adviser living on the floor. The eight houses: Art House, Business Leaders of Tomorrow, 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 range in size from 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, plus playground equipment for children.

### RIT Inn and Conference Center

A living experience for upperclass students, the Inn and Conference Center features a hotel-like setting. Each room features 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.

## The Center for 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 21 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 550 student athletes with 24 men's and women's varsity sports. Several teams have reached national playoff competition, highlighted by the men's ice hockey team, which has captured two national Division III titles, in 1983 and 1985. Over the years, RIT also has boasted numerous All-Americans, individual national champions, and two NCAA postgraduate scholars.

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

With recreational interests at an all-time high, RIT offers something for everyone. Through payment of full-time tuition (12 quarter credit hours), students are automatically eligible to use the recreation facilities. Students registered for a co-op are also automatically provided with a recreation membership. Students taking 0-11 credit hours, or those who are considered to have full-time equivalency, must purchase a membership at the Student Life Center Main Office. The recreational facilities available include the following:

**Clark Gymnasium:** The gymnasium features a main gymnasium and a smaller auxiliary gymnasium used primarily for varsity practices and contests, a wrestling room, an athletic weight room, and a sports medicine center.

**Gordon Field House and Activities Center:** The field house includes a 160,000-square-foot, multi-purpose field house; a 60,000-square-foot multi-purpose arena; a 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.

**Hale-Andrews Student Life Center (SLC):** The SLC is an 88,000-square-foot complex that features five multi-purpose courts (basketball, volleyball, badminton), eight racquetball courts (four equipped for wallyball), two dance studios/fitness rooms, a mini-gym (basketball, volleyball, and multi-purpose court), an elevated 200-meter jogging track, an equipment cage (for equipment loans and towel service), a spinning room, a boxing/kick-bag room, locker rooms with saunas, classrooms, a CPR room, and an overnight equipment rental office.

**Outdoor Facilities:** There are nine all-weather, lighted tennis courts next to the U Parking Lot. The athletic fields, which feature an all-weather track with generous seating, host soccer, lacrosse, and track events. Other fields include baseball, softball, practice fields, jogging trails, archery range, nature trails, and artificial turf field.

**Red Barn:** Based in the Red Barn, the Interactive Adventures Program 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.

**Ritter Arena:** Ritter Arena is home to men's and women's ice hockey teams as well as the Genesee Figure Skating Club. Public skating and Learn to Skate programs also are available.

### Reservations

Reservations for all facilities are on a priority system. Reservations for groups of 10 or more people (with the exception of racquetball and indoor tennis) must be made two business days in advance. Reservations and requests for longer than two hours or multiple reservations will be handled on an individual basis and should be requested well in advance by calling the appropriate number and possibly completing a request form. Racquetball and indoor tennis courts may be reserved one day in advance by calling (585) 475-2280.

### 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 also is a recreational league, in which league champions are based on a point system, 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 (spring), dodgeball, flag football (fall), softball (fall and spring), ice hockey (fall and winter), speedball, 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 the Senior Night social event 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 famous 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.

## **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.

## **Student Government clubs**

---

**(585) 475-4483 (voice/TTY)**

<http://campuslife.rit.edu/clubs>

For more information about the following clubs, please contact the Clubs Office at (585) 475-4483 (voice/TTY), or 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 African American Business Students  
Society of Manufacturing Engineers  
Society of Plastics Engineers  
Student Dietetic Association  
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  
Animé 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 inquire with their academic department regarding the 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.



---

## Student Government

<http://sg.rit.edu/>

**(585) 475-2204 (voice/TTY)**

Student Government is the representative body for students and 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.

---

## Off-Campus and Apartment Student Association

[www.rit.edu/studentaffairs/ocasa/](http://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, free coffee, tea, and hot chocolate. A daily newspaper and a variety of magazines are on hand.

---

## 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.

---

## Black Awareness Coordinating Committee

**(585) 475-5624 (voice/TTY)**

The Black Awareness Coordinating Committee (BACC) fosters an awareness of the role of African American men and women in the total society and creates a greater understanding of the African American culture among students, faculty, and staff at RIT. Each year the committee sponsors various social and cultural programs designed to achieve these objectives.

---

## Residence Halls Association

[www.rit.edu/studentaffairs/rha/](http://www.rit.edu/studentaffairs/rha/)

**(585) 475-6655 (voice/TTY)**

The Residence Hall Association (RHA) represents all students living in the residence halls. RHA is the liaison between the residence hall student body and the administration. RHA strives to provide diverse programming for the students by supporting programs with Residence Life staff and other organizations. RHA also provides students with a variety of services such as a video library with over 800 videos and DVDs. RHA also operates RITchie's, a student-run arcade with a coffeehouse atmosphere located in the tunnel under Gibson Hall. The RHA office is located in the tunnel under Baker Hall.

---

## Global Union

[www.rit.edu/sg/globalunion](http://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 non-commercial, educational station. It also 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 in 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 Student Congress

---

<http://nsc.rit.edu>

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

---

**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](mailto: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](http://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/](http://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](mailto: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](mailto: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 [jhkgs@rit.edu](mailto:jhkgs@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 [jhkgs@rit.edu](mailto:jhkgs@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](mailto:cjagsh@rit.edu).

## Center for Religious Life

---

[www.rit.edu/studentaffairs/religion/](http://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 center's interfaith staff provide worship and observances within diverse religious and cultural traditions. Several religious clubs also gather each week around the campus. Nondenominational Christian, Southern Baptist, Catholic, Muslim, Jewish, Hindu, Lutheran, and Orthodox Christian are among the many communities serving campus needs and interests. 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

RIT's 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.

## Women's Center

---

[www.rit.edu/studentaffairs/womenscenter/](http://www.rit.edu/studentaffairs/womenscenter/)  
**(585) 475-7464 (voice/TTY)**

The Women's Center serves to support, promote, and celebrate the educational and personal success of RIT women. The center

provides information, programming, support, and advocacy to address a wide variety of issues affecting women (and men), including healthy relationships, sexuality, pregnancy, body image, pornography, interpersonal violence, sexual assault, sexual harassment, personal safety, and exploration of gender-related issues. The Women's Center strives to provide a visible and accessible location and a supportive environment where students are encouraged to engage in dialogue, exchange viewpoints, and find assistance.

Through its programs, speakers, and workshops, the center addresses topics relevant to the academic, social, psychological, and physical needs and interests of women. The center sponsors the women's mentoring program, which connects second-year students with upperclass students. The center also has an active program for men interested in becoming better allies of women.

## RIT Leadership Institute and Community Service Center

---

<http://campuslife.rit.edu/leadership/>  
**(585) 475-6974**

The RIT 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.

## Public Safety

---

<http://finweb.rit.edu/publicsafety/>  
**(585) 475-2853**

The Public Safety Department is open 24 hours a day and is located in Grace Watson Hall. To report an emergency on campus, dial 3333 (voice/TTY) from any campus phone or (585) 475-3333 (V/TTY) from any cell phone or from any RIT apartment complex to contact the Public Safety Department. The department provides the following services:

**Blue-light call boxes:** 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 use the call boxes also. The call boxes may be used to request an escort, to assist a motorist, to report suspicious individuals or activity, or to request access to a locked building or room.

**Mobile escort service:** Public Safety strongly encourages students to use the mobile escort service 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 (voice/TTY), 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 programs on various topics, including fire safety (video and slide presentations), crime prevention, personal safety, alcohol awareness, and driver safety as well as a state-certified defensive driving program. Call (585) 475-2074 for more information.

**Public Safety Annual Report:** Additional information about Public Safety services, security procedures, and crime statistics can be found in the RIT Public Safety Annual Report, which can be obtained by calling (585) 475-6963. Services are also explained on the public safety website.

The Advisory Committee on Public Safety will provide, upon request, all campus crime statistics as reported to the Department of Education. RIT crime statistics also can be found at the Department of Education website (<http://ope.ed.gov/security/>) or by contacting RIT's Public Safety department at (585) 475-6620 (v/TTY). 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 area service providers and campus managers. If necessary, we will provide updated information through broadcast e-mail, a mass notification system, voice mail, and the university's website. More information on emergency and safety procedures can be found at <http://finweb.rit.edu/publicsafety/preparedness/>.

## Environmental Health and Safety

---

The environmental health and safety department conducts programs in fire safety practices and evacuation techniques (which are reinforced through fire drills held in accordance with New York state education laws), safety in the workplace, environmental health, and defensive driving certification (recognized by New York state for insurance and point reductions).

## Parking and Transportation Services

---

<http://finweb.rit.edu/grms/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, but 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 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. Information may be obtained by calling the transportation office at (585) 475-7300 or the front desk at (585) 475-2074.

**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.

## 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.

## Diversity

### Commission for Promoting Pluralism

The Commission for Promoting Pluralism was established to formulate a plan of action that would address seriously and deliberately the subject of pluralism and community building in every part of the university. Its evolution is the result of an identified need for RIT constituents to deepen their respect and appreciation for all people in the RIT community and beyond. This institutional focus attempts to:

- proactively identify and eliminate barriers that restrict equality throughout the RIT community;
- develop and implement programs that promote commitment to equality and justice in campus-wide activities; and
- develop and nurture a support system that increases participation by all members of the RIT community.

## 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**

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.)

8. 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.

9. 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.

10. Behavior that is dangerous to one self 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.

11. 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 alcohol-

ic beverages will face Public Safety intervention, campus judicial action, and possible civil and criminal prosecution.

12. Use of false or altered identification or other misrepresentation of one’s age in order to possess or consume alcohol is explicitly forbidden.

13. 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.

14. 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
<p><b>Possession of alcohol</b></p> <ul style="list-style-type: none"> <li>• In residence halls and Greek houses regardless of age</li> <li>• Under 21 years of age</li> <li>• Possession of bulk alcohol</li> </ul>	<p><b>First offense:</b> Disciplinary probation  <b>Second offense:</b> Deferred disciplinary suspension/deferred removal from housing and possible referral for a chemical dependency screening  <b>Third offense:</b> Disciplinary suspension or removal from housing, with appropriate conditions</p>
<p><b>Behavior that suggests the excessive consumption of alcohol</b></p>	<p><b>First offense:</b> Probable deferred disciplinary suspension/deferred removal from housing; possible referral to alternative educational sanction program or a chemical dependency screening  <b>Second offense:</b> Disciplinary suspension and/or removal from housing, with appropriate conditions</p>
<p><b>Serious policy violations (including serving alcohol to minors, hazing events involving alcohol, or dangerous behavior as a result of alcohol)</b></p>	<p><b>First offense:</b> Probable disciplinary suspension and/or removal from housing, with appropriate conditions</p>
<p><b>DWI on campus</b></p>	<p><b>First offense:</b> Referral to local law enforcement agency and disciplinary suspension</p>
<p><b>Student organizational violations related to alcohol</b></p>	<p><b>First offense:</b> Educational/community related sanctions; possible disciplinary suspension of organization and/or removal of recognition</p>

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.

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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**

1. RIT explicitly prohibits the use, possession, sale, manufacture, or trafficking of illegal drugs on RIT-owned or -operated property, or at RIT-sponsored events.

2. 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.

3. 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	<p><b>First Offense:</b> Deferred disciplinary suspension; deferred removal or removal from RIT housing; possible referral for a chemical dependency screening and alternative education program</p> <p><b>Second Offense:</b> Disciplinary suspension or dismissal; drug treatment while on suspension from the university</p>
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.

### 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. 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, 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. Future development plans on campus include the Global Village, a residential and commercial space that will feature 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.

### Housing

Serving nearly 7,000 students, RIT's residence halls, the RIT Inn, 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 (Art House, Computer Science House, Engineering House, House of General Science, International House, Photo House, and Unity House) 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, located near the campus. Residents of the RIT Inn enjoy many of the perks of a first-rate hotel, including an indoor/outdoor swimming pool and a fitness center.

### The RITreat

The RITreat is an area dedicated to students in the Student Alumni Union. 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 Alumni Union

The Student Alumni Union is designed specifically to service events sponsored by and for the entire campus community—students, faculty, administrative groups, alumni, and guests. 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; Ben & Jerry's ice cream shop; two separate dining areas (the main cafeteria and the Ritz Sports Zone); meeting rooms; and lounges. Organizations with offices housed in the Student Union include Student Problem Resolution, Student Affairs, Student Conduct and Conflict Management Services, Women's Center, International Student Services, the North Star Center, Black Awareness Coordinating Committee, Food Service, College Activities Board, The Center for Campus Life, Leadership Institute and Community Service Center, Student Government, WITR, the RIT Credit Union, *Reporter* magazine, Off-campus and Apartment Student Association, Staff Council, and Global Union.

## Recreation and intramurals

The **Gordon Field House and Activities Center** is a two-story, 160,000-square-foot building that features three areas:

The event venue/athletic field can be divided into three sections, holding more than 8,000 people for special events such as convocation, guest speakers, or concerts. It also can accommodate activities such as lacrosse, tennis, floor/field hockey, indoor track, baseball, softball, soccer, and volleyball.

The aquatics center includes a competition pool, recreational pool, and spectator seating. The eight-lane, 25-meter competition pool features a moveable bulkhead to separate the diving and swimming areas. The recreational pool includes a spa area with hot tub, waterspouts, and a current channel for relaxation and therapy.

A fitness center of approximately 16,000 square feet includes separate areas for free-weight training and cardiovascular equipment.

## Food Service venues

RIT operates the food service establishments on campus and provides a large array of dining choices.

**The Café & Market at Crossroads** features a gourmet coffee shop, Jump Asian cuisine, Italian specialties, grill specials, a sub

shop, a pizza station, and a marketplace that sells a wide range of snacks, beverages, and health and beauty supplies.

**Beanz** is a coffee shop and lounge in the Grace Watson lobby that serves the popular Spot Coffee, Freshens Smoothies, fresh-baked Otis cookies, and treats from their bakery.

**The Commons**, located in the Hettie L. Shumway Building, is a great place to enjoy pizza from our stone-fired oven, Quiznos subs, or our home-style entrees.

**The Corner Store** is a convenience store near the residential buildings.

**Gracie's**, located in Grace Watson Hall, offers unlimited seconds. Special events give students the chance to explore ethnic cuisine and celebrate traditional holidays.

**Ritz Sports Zone** serves chicken wings, deli sandwiches, and, from **Sandella's** in the B. Thomas Golisano College of Computing and Information Sciences, gourmet wraps, flatbread pizzas, paninis, quesadillas, fresh salads, and more.

**SAU Café** serves traditional fare with great daily specials, including cuisine from Pakistan, Thailand, China, and Mexico.

**Sol's** offers a variety of classic milkshakes and frozen delights, gourmet pretzels, and baked treats. Sol's also features an extensive array of health and beauty aids, vitamins and supplements, housewares, magazines, and specialty foods.

## 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.

# Undergraduate Admission

[www.rit.edu/admission](http://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 transfer admission and all freshman applications for winter, spring, or summer quarter entry are reviewed as they are received, and notification letters are mailed four to six weeks after the application is completed.

## 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. (This does not include course work in progress.)

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.

## 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 listing 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](http://admissions.rit.edu/applyonline.php3) before submitting your portfolio.

## 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 these 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 typically sends notification of admission decisions four to six weeks after all application materials have been provided.

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.

**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.

**Diagnostic testing in mathematics:** Students 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. Students with a required calculus sequence in their program of study will be required to take a calculus placement exam to determine the appropriate mathematics course with which to begin their studies.

**New York State immunization requirement:** New York State Public Law 2165 requires that all matriculated students enrolled for more than six 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, Bausch & Lomb Center, 60 Lomb Memorial Drive, Rochester, NY, 14623-5604, sending e-mail to [visit@rit.edu](mailto:visit@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, Lyndon Baines Johnson Building, 52 Lomb Memorial Drive, Rochester, NY 14623-5604, sending an e-mail to [www.ntid.rit.edu](http://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/part-time](http://www.rit.edu/part-time), call (585) 475-2229 for information, or visit our office on the first floor of the Bausch & Lomb Center on campus.

## Freshman Admission Guidelines

### College of Applied and Science and Technology

Academic Programs	High School Preparation Required <sup>1</sup>
<b>Engineering Technology:</b> Civil, Computer, Electrical, Electrical/Mechanical, Manufacturing, Mechanical, and Telecommunications Engineering Technology programs; Undeclared Option <sup>2</sup>	Algebra, geometry, trigonometry and two years of science (including physics or chemistry) required; technology courses desirable
<b>Environmental Management:</b> Environmental Management, Safety Technology	Three years of mathematics (including trigonometry) and two years of science (including physics or chemistry)
<b>School of Hospitality and Service Management:</b> Hospitality and Service Management, Nutrition Management	College preparatory program including algebra, geometry and two years of science; chemistry required for Nutrition Management program.
<b>Multidisciplinary Studies:</b> Applied Arts and Science (transfer only)	Freshmen should apply to the University Studies Program <sup>3</sup> .
<b>Packaging Science:</b> Management, Technical, and Printing Options	Algebra and two years of science required; technical option requires geometry and trigonometry

### E. Philip Saunders College of Business

Academic Programs	High School Preparation Required <sup>1</sup>
Accounting, Finance, International Business, Management, Management Information Systems, Marketing, New Media Marketing, Undeclared Business Option <sup>2</sup>	College preparatory program including algebra, geometry, and two years of science; trigonometry and courses emphasizing writing skills also desirable

### B. Thomas Golisano College of Computing and Information Sciences

Academic Programs	High School Preparation Required <sup>1</sup>
Applied Networking and System Administration, Information Security and Forensics	Algebra, geometry, and two years of science required; physics, chemistry, computing, and technology courses recommended
Computer Science	Algebra, geometry, trigonometry, and two years of science required
Information Technology, New Media/Interactive Development, Game Design and Development	Algebra, geometry, and two years of science required; technology courses desirable
Medical Informatics	Algebra, geometry, trigonometry, biology, and chemistry required
Software Engineering	Algebra, geometry, trigonometry, chemistry, and physics required; precalculus recommended

<sup>1</sup> Cooperative Education: 1-required, 2-optional, 3-internship or practicum required, 4-no specific requirement.

## Kate Gleason College of Engineering

Academic Programs	High School Preparation Required <sup>1</sup>
Biomedical (pending NYS approval), Chemical, Computer, Computer/Software, Electrical, Electrical/Biomedical, Electrical/Computer, Industrial and Systems, Industrial/Ergonomics, Industrial/Manufacturing Industrial/Information Systems, Mechanical, Mechanical/Aerospace, Mechanical/Automotive, Mechanical/Bioengineering, Mechanical/Energy, and Microelectronic Engineering programs; Engineering Exploration Program <sup>2</sup>	Four years of mathematics required (algebra, geometry, trigonometry, and precalculus); physics and chemistry required for all programs, biology also required for Electrical/Biomedical Engineering option

## College of Imaging Arts and Sciences

Academic Programs	High School Preparation Required <sup>1</sup>
<b>School of Art:</b> Fine Arts Studio, Illustration, Medical Illustration, Undeclared Art Option <sup>2</sup>	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.
<b>School of Design:</b> 3D Digital Graphics, Graphic Design, Industrial Design, Interior Design, New Media/Design, Undeclared Design Option <sup>2</sup>	
<b>School for American Crafts:</b> Ceramics/Ceramic Sculpture, Glass/Glass Sculpture, Metals/Jewelry Design, Woodworking/Furniture Design, Undeclared Crafts Option <sup>2</sup>	
<b>School of Film and Animation:</b> Film and Animation, Digital Cinema	College preparatory program, including two years of mathematics and two years of science
<b>School of Photographic Arts and Sciences:</b> Advertising Photography, Fine Art Photography, Photojournalism, Biomedical Photographic Communication, Imaging and Photographic Technology, Visual Media	College preparatory program, including two years of mathematics and two years of science; biology required for Biomedical Photographic Communication
<b>School of Print Media:</b> Graphic Media, New Media/Publishing	Algebra, trigonometry, and two years of science (physics or chemistry preferred)

## College of Liberal Arts

Academic Programs	High School Preparation Required <sup>1</sup>
Advertising and Public Relations, Criminal Justice, Economics, International Studies, Journalism, Professional and Technical Communication, Psychology, Public Policy, Urban and Community Studies, Undeclared Liberal Arts Option <sup>3</sup>	College preparatory program, including algebra, geometry, and two years of science required; trigonometry also required for Public Policy.

## National Technical Institute for the Deaf

Academic Programs	High School Preparation Required <sup>1</sup>
Accounting Technology, Administrative Support Technology, Applied Computer Technology, Applied Mechanical Technology, Arts and Imaging Studies, ASL-English Interpretation, Automation Technologies, 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 Department of Admissions, (585) 475-6700 (voice/TTY)

## College of Science

Academic Programs	High School Preparation Required <sup>1</sup>
Applied Mathematics, Applied Statistics, Computational Mathematics	Algebra, geometry, trigonometry, and two years of science required; additional mathematics recommended
Biology, Bioinformatics, Biotechnology	Algebra, geometry, trigonometry, biology, and chemistry required
Biochemistry, Chemistry, Environmental Chemistry, Polymer Chemistry	Algebra, geometry, trigonometry, chemistry, and one science elective required; physics recommended
Environmental Science	Algebra, geometry, trigonometry, biology, and chemistry required
Physics	Algebra, geometry, trigonometry, physics, and one science elective required
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
General Science Exploration <sup>2</sup> , Premedical Studies <sup>3</sup>	Algebra, geometry, trigonometry, biology, chemistry, and physics are recommended
<b>Center for Imaging Science:</b> Imaging Science	Algebra, geometry, trigonometry, and chemistry or physics required; precalculus desirable

<sup>1</sup> 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.

<sup>2</sup> A one-year program for students wishing to explore alternatives before selecting a specific degree program within this RIT college or school.

<sup>3</sup> 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.

<sup>1</sup> Cooperative Education: 1-required, 2-optional, 3-internship or practicum required, 4-no specific requirement.



## Transfer Admission Guidelines

### College of Applied Science and Technology

Program at RIT	Co-op <sup>1</sup>	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
<b>Engineering Technology:</b> 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, 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
Electrical Engineering Technology	1	Fall preferred	Electrical Technology, Electronic 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
<b>Environmental Management:</b> Environmental Management & Technology, Safety Technology	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
<b>School of Hospitality and Service Management:</b> Hospitality and Service Management, Nutrition Management	1	Any quarter	Dietetics or Nutrition, Foodservice Management, Hotel/Resort Management, Travel/Tourism Management, Agriculture, Technology, Business, or Liberal Arts	Courses in business and economics, a foreign language, mathematics, science, and liberal arts; science courses are required for Nutrition Management program
<b>Multidisciplinary Studies:</b> Applied Arts and Science	2	Any quarter	Transfer from associate degree programs considered on individual basis.	Courses in the liberal arts, sciences, and mathematics
<b>Packaging Science:</b> Management Option, Technical Option, Printing Option	1	Any quarter	Business Administration, Marketing, Management, Graphic Arts, Engineering Science, Liberal Arts with math/science	Courses in business, mathematics, science, the liberal arts, and statistics or computer science

### E. Philip Saunders College of Business

Program at RIT	Co-op <sup>1</sup>	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	AS degree in 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, mathematics, science, economics, and computer science

### B. Thomas Golisano College of Computing and Information Sciences

Program at RIT	Co-op <sup>1</sup>	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
Applied Networking and System Administration, Information Technology, Information Security and Forensics, Game Design and Development, Medical Informatics, New Media/Interactive Development	1	Any quarter (fall preferred for New Media/Interactive Development)	Computer Applications, Computer Science, Information Systems	Courses in programming, computer applications, calculus, lab sciences, and the liberal arts

<sup>1</sup> Cooperative Education: 1-required, 2-optional, 3-internship or practicum required, 4-no specific requirement.

### Kate Gleason College of Engineering

Program at RIT	Co-op <sup>1</sup>	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Biomedical Engineering (pending NYS approval), Chemical Engineering, Computer Engineering, Electrical Engineering, Industrial and Systems Engineering, Mechanical Engineering, Microelectronic Engineering	1	Fall preferred	AS degree in 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 Imaging Arts and Sciences

Program at RIT	Co-op <sup>1</sup>	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
<b>School of Art:</b> Fine Arts Studio, Illustration, Medical Illustration <b>School of Design:</b> 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
<b>Transfer Adjustment:</b> Graphic Design		Summer only		Summer courses can lead to third-year status
<b>School for American Crafts:</b> Ceramics/Ceramic Sculpture, Glass/Glass Sculpture, Metals/Jewelry Design, 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
<b>School of Film and Animation:</b> Film and Animation, Digital Cinema	2	Fall only	No common program available	Courses in the liberal arts; science; design; drawing; and film, video, or animation
<b>School of Photographic Arts and Sciences:</b> 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
Advertising Photography, Fine Art Photography, Photojournalism, Visual Media	4	Fall preferred	Applied Photography	Courses in the liberal arts, photography, design, and art history; portfolio required for photo transfer credit
<b>Transfer adjustment:</b> Available in all photography programs		Summer only	Transfer adjustment leading to second- or third-year status in most programs	
<b>School of Print Media:</b> Graphic Media, 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

<sup>1</sup> Cooperative Education: 1-required, 2-optional, 3-internship or practicum required, 4-no specific requirement.

## College of Liberal Arts

Program at RIT	Co-op <sup>1</sup>	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	AS degree in Business Administration or Liberal Arts	Courses in business, the liberal arts, mathematics, 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
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, mathematics, 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

## 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 Mechanical Technology, Arts and Imaging Studies, ASL-English Interpretation, Automation Technologies, 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).	The liberal arts, business, communication, advertising, and public relations

## College of Science

Program at RIT	Co-op <sup>1</sup>	Entry Term	Appropriate Associate Degree Program for Transfer Recommendations Without Associate Degree	Transfer Course Recommendations Without Associate Degree
Biology	2	Fall preferred	Biology or Liberal Arts with biology option	Courses in the liberal arts, sciences, or mathematics
Bioinformatics	1	Fall preferred	Biotechnology or Liberal Arts with biology	Courses in the liberal arts, sciences, and mathematics
Biotechnology	2	Fall preferred	Biotechnology or Liberal Arts with biology	Courses in the liberal arts, sciences, and mathematics
Biochemistry, Chemistry, Environmental Chemistry Option, Polymer Chemistry	2	Any quarter	Liberal Arts with chemistry option; Chemical Technology, Laboratory Technology	Courses in the liberal arts, chemistry, mathematics, and physics
Biomedical Sciences	2	Fall preferred	Liberal Arts with science option; Allied Health; Radiologic Technology	Courses in the liberal arts, sciences, and mathematics
Diagnostic Medical Sonography (Ultrasound)	3	Fall preferred	Liberal Arts with science option; Allied Health; Radiologic Technology	Courses in the liberal arts, sciences, and mathematics
Environmental Science	2	Fall preferred	Biology, Chemistry, Environmental Science, Liberal Arts with science option	Courses in the liberal arts, sciences, and mathematics
Applied Mathematics, Computational Mathematics, Applied Statistics	2	Any quarter	Liberal Arts with math/science option, Computer Science, Engineering Science, Sciences	Courses in mathematics, computer science, and the liberal arts
Physician Assistant	3	Fall only	Liberal Arts with science option; Allied Health areas	Courses in the liberal arts, sciences, and mathematics
Physics	2	Fall preferred	Liberal Arts with math/science option	Courses in the liberal arts, physics, mathematics, and chemistry
<b>Center for Imaging Science:</b> 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

<sup>1</sup> 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 the George Eastman building. 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 2009-2010 school year are as follows:

Fall Quarter—August 19, 2009

Winter Quarter—November 23, 2009

Spring Quarter—February 24, 2010

Summer Quarter—May 20, 2010

## 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; the Tier 2 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 2009–10 (MATRICULATED DAY COLLEGE STUDENTS EXCEPT NTID) \*

Tuition	Per Quarter	Per Year— Three Quarters
<b>Full-time Undergraduate</b> (12–18 Credit Hrs.)	\$9,622	\$28,866
<b>Part-time Undergraduate</b> (Less than 12 Credit Hrs.)	\$641/Cr. Hr.	
<b>Student Activities Fee (Mandatory Charge)</b>		
Full-time Undergraduate	\$70	\$210
Part-time Undergraduate	\$35	\$105
<b>Student Health Fee (Mandatory Charge)</b>		
Full-time Undergraduate	\$69	\$207
<b>Residence Hall Room Charges</b> §		
Double Occupancy	\$1,861	\$5,583
Single Occupancy	\$2,140	\$6,420
<b>Board/Meal Plans</b> **		
Ultra-Meal Plan (continuous entry to Grace Watson) + 5 meal options	\$1,517	\$4,551
14 Meals (Includes \$89 debit/qtr.) + 5 meal options	\$1,353	\$4,059
12 Meals (Includes \$228 debit/qtr.) + 5 meal options	\$1,353	\$4,059
All Debit (upperclassmen only)	\$1,353	\$4,059
<b>Matriculated Evening Division students</b>		
Undergraduate Tuition	\$432/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 Web at [www.universityhealthplans.com](http://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**

1. 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.

2. Students must pay all charges not authorized for payment by VR before the quarterly due date.

3. VR counselors should specify each charge they are covering on their authorization forms.

4. 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 to 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 such a student later finds that he or she is subject to academic suspension or has failed prerequisites, the student 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

We feel strongly that no qualified student should refuse to consider RIT because of cost. With this in mind, RIT 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 \$197 million from all sources, including more than \$106 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.ed.gov/](http://www.fafsa.ed.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 competitions, 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. Winners 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 alterations to a student's financial aid award are necessary. If we are required by federal regulations to amend 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. The Federal Pell Grant and the New York State Tuition Assistance Program (TAP) are additional examples of grants. Many 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. Federal PLUS Loans are available to supplement other aid programs in meeting educational costs. While the parent loan 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 alternative educational loans to assist families in meeting educational expenses. These loans are available to students who are determined to be credit worthy 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 through employment 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 8,000 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 also may contribute to 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 combines the elements of a deferred payment plan and a prepayment plan to allow students and their families to finance educational 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, may be obtained from the Student Financial Services Office.

RIT also offers a tuition prepayment plan that guarantees no tuition increases for the equivalent of two or four years (six or

12 academic quarters) of undergraduate education. The cost for the plan is established each year but is generally less than tuition at the current rate. 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.

National Technical Institute for the Deaf-sponsored students may contact the NTID/vocational rehabilitation billing department at (585) 475-2080 (voice/TTY) or (585) 475-5489 (voice/TTY) for more information about payment options.

## 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.

TAP academic requirements are current as of the 2008-09 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 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 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.

## 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	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>
a student must have accrued at least this many credits	0	3	9	20	32	44	56	68	80
with at least this grade point average	0	.50	.75	1.00	1.20	1.30	2.00	2.00	2.00

### Bachelor's Degree—Quarter System

Before being certified for this payment	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>	13 <sup>th</sup>	14 <sup>th</sup>	15 <sup>th</sup>
a student must have accrued at least this many credits	0	3	9	20	32	44	56	68	80	92	104	116	132	148	164
with at least this grade point average	0	.50	.75	1.00	1.20	1.30	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

### Graduate Degree—Quarter System

Before being certified for this payment	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
a student must have accrued at least this many credits	0	12	24	36	48	60
with at least this grade point average	0	2.00	2.50	2.70	2.80	2.90

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 2009–10 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 requirements will be notified of the deficiency and advised of the appeal process. Copies of the policy are available upon request.

### Academic progress requirements for RIT grants and scholarships

Academic progress requirements for RIT need-based grants and scholarships 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.

### 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.

### 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:

$$\text{Scholarship plus student payments} = \text{Percent returned to scholarship program} \times \text{Remaining credit balance}$$

## UNDERGRADUATE FINANCIAL AID PROGRAMS 2009-10

MERIT SCHOLARSHIPS	ELIGIBILITY	AMOUNT†	WHERE TO APPLY
RIT Presidential Scholarships	Winners are selected based on academic records, recommendations and academic program requirements.	\$7,500 to \$13,000 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 \$15,000 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.	\$5,000 to \$7,500 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.	\$5,000 to \$7,500 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.	\$5,000 to \$7,500 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 RIT Computing Medal winner from a participating high school.	\$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 & Creativity Award Scholarships	Awarded to Innovation & 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: <a href="http://www.rit.edu/co-opscholarship">www.rit.edu/co-opscholarship</a> . 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: <a href="http://www.sae.org/students/engschlr.htm">www.sae.org/students/engschlr.htm</a> . 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: <a href="http://www.usfirst.org">www.usfirst.org</a> . 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: <a href="http://www.rit.edu/nrs">www.rit.edu/nrs</a> 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	RIT offers a limited number of scholarships to full-time matriculated undergraduate students who demonstrate exceptional financial need by filing the Free Application for Federal Student Aid (FAFSA). Preference is given to students who are from underrepresented populations and those not traditionally studying in certain academic disciplines. No separate application is required.	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 students 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.	\$976 to \$5,350 per year; prorated for part-time study.	File the Free Application for Federal Student Aid (FAFSA).
Federal Academic Competitiveness Grant (ACG)	Full-time or half-time students who are Pell Grant-eligible and who completed a rigorous secondary school program and meet need criteria.	Up to \$750 for first-year students; up to \$1,300 for second-year students.	File the Free Application for Federal Student Aid (FAFSA).
National Science and Mathematics to Retain Talent (SMART) Grant	Full-time or half-time students who are Pell Grant-eligible and who are enrolled in certain math and science programs. Applicants need to maintain a 3.0 GPA and meet need criteria.	Up to \$4,000 for third- or fourth-year students.	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 departments in VT, RI, PA, and D.C.

† 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, 5thyears: \$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, 5thyears: \$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.

† Scholarship amounts indicated are based on RIT day tuition rates. Awards may be prorated for NTID-sponsored students or for evening tuition rates.



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 \$7.15 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 \$7.15 per hour).	Contact the RIT Student Employment Office at <a href="http://www.rit.edu/emcs/seo">www.rit.edu/emcs/seo</a> .

† Scholarship amounts indicated are based on RIT day tuition rates. Awards may be prorated for NTID-sponsored students or for evening tuition rates.

OTHER AWARDS	ELIGIBILITY	AMOUNT†	WHERE TO APPLY
Regents Award for Child of Veterans (CV)	Children of veterans who are deceased, disabled or missing in action as a result of service during World War I, World War II, the Korean conflict, Vietnam/Indochina, Persian Gulf or Afghanistan (CV).	\$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 on at <a href="http://www.hesc.com">www.hesc.com</a> . 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 <a href="http://www.hesc.com">www.hesc.com</a> .
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 <a href="http://www.hesc.com">www.hesc.com</a> . May 1 deadline.
NYS Aid to Native Americans	Member 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 <a href="http://www.hesc.com">www.hesc.com</a> .
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.
New York Lottery Leaders of Tomorrow Scholarship	U.S. citizen and graduate of NYS high school; must attend NYS college or school.	\$1,250 per year. Maximum of four years; one award for each high school in the state.	Contact your high school guidance office.
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 <a href="http://www.va.gov">www.va.gov</a> .
Aid to Native Americans	Students who are at least one-quarter American Indian, Eskimoc, 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 2009. 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.

## Named Scholarships

Each year the university awards named 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  
American Color Graphics Scholarship  
Amzalek Ames Scholarship  
Salvador Anchondo Jr. Memorial Scholarship  
Association of Women in Computing  
Avis Mason Andrews Graduate Scholarship  
Robert Anderson Scholarship  
Betsy L. Andrews Scholarship  
Clara L. Andrews Scholarship  
Ezra R. Andrews Scholarship  
Kate Rider Andrews Scholarship  
Randall Andrews Scholarship  
Howard Applegate Scholarship  
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  
Ruth L. Bernhardt Scholarship  
Frank P. Benz Jr. Memorial 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  
Bryce Scholarship  
Nettie Bullis 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  
Caldwell Manufacturing Scholarship  
Campus Connections Book and Supply Scholarship  
Richard Capilla Scholarship  
Chester Carlson Scholarship  
Howard F. Carver Scholarship  
Howard T. Case Scholarship  
Theodore Chapman Scholarship  
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  
Wells Coleman Scholarship  
Coleman Corporation Scholarship  
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  
Bryon 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  
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  
 Arthur King Goldsmith 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  
 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  
 Frank Hutchins Scholarship  
 The Ralph Hymes Endowed Scholarship Fund  
 Arthur Ingle Scholarship  
 Insero and Company Scholarship  
 Institute of Fellows Scholarship  
 Interpretek Scholarship

Italian Women's Civic Club  
 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  
 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  
 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  
 R. David LeButt Packaging Scholarship  
 LeChase Corp. Scholarship  
 Leenhouts Family Scholarship  
 Lehigh Press Scholarship  
 Chester H. Lehmann 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  
 M&T Bank Urban Scholars Scholarship  
 Barbara MacCameron Scholarship  
 Lois C. Macy Scholarship  
 Magazine Publishers 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  
 McGowan Foundation 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  
 MMET Faculty, Staff, Alumni  
 Earl Morecock Scholarship  
 Bernice Skinner Morelock Scholarship  
 Clifford Waite Morgan Scholarship  
 Catherine Morse Scholarship  
 Charles W., Sue L., Freda L. Muffitt Scholarship  
 Mowris-Mulligan Memorial Scholarship  
 Irene Muntz Endowed HSM Scholarship  
 Irene L. Muntz Endowed Scholarship  
 Dr. Gengi Murai Endowed Scholarship Fund  
 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

Philips ECG Inc. Scholarship  
 Phoenix Fiction Award  
 Seth Policzer and Syed Ali Turab Memorial Endowed Scholarship  
 Eugene and Wanda Polisseni Award  
 Polyfibrin Technologies  
 Paul W. Porter Industrial Design Scholarship  
 A. C. Powers Memorial Scholarship  
 Praxair Scholarship  
 David Presco Scholarship  
 John Myers Pritchard  
 Pulver Family Endowed Scholarship Fund  
 Q. C. I. Corporation Scholarship  
 Queens Group 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  
 Warren Rhodes Memorial Scholarship  
 Rochester Midland Endowed 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 Womens Council Scholarship  
 Frank Ritter Memorial Scholarship  
 Robbins & Meyers Scholarship  
 Archibald & Mary Robinson 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  
 RTEM Scholarship  
 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  
 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  
 Edythe & Edward Sklar Endowed Scholarship Fund  
 Albert J. Simone Entrepreneurship Scholarship  
 Albert & Carolie Simone Margaret's House Scholarship  
 Albert & Carolie Simone NRS Scholarship  
 Louis & Nellie Skalny Scholarship  
 Joseph & Deidre Smialowski Honors Scholarship  
 Susan Smigel International Student Scholarship  
 David Alan Smith Endowed Scholarship  
 David Alan Smith Engineering and Entrepreneurship 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  
 Peter H. Sykes Endowed Scholarship  
 George Tanzer Memorial 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  
 Clifford & Ruth Ulp Memorial Scholarship  
 United Way Child Care Scholarship  
 Walter Vanderwheel Memorial Scholarship  
 Elizabeth VanHorne Memorial Scholarship  
 James Ventimiglia Memorial Printing Award  
 Frank Vereka Scholarship  
 Charles and Andrea Volpe Scholarship  
 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  
 Louis A. Wehle Scholarship  
 David Weinstein Scholarship  
 Harold J. Weisburg Scholarship  
 Mark & Beulah Welch Scholarship  
 Cy Welcher Scholarship  
 James Weldon and Lillie Chaney Brumfield Scholarship  
 Edwin Welter Fund  
 Weyerhaeuser Fellowship  
 Nelson Whitaker Scholarship  
 Ron & Joann White Scholarship  
 Whitman Family Scholarship  
 Eloise Wilkin Memorial Scholarship  
 Elizabeth W. Williams Endowed Fund for the Performing Arts  
 Becky Wills Scholarship  
 James Wilson Memorial Scholarship  
 Thomas B. Wilson Scholarship  
 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 in Printing 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



# The Rochester Community

Rochester is a true college town. Home to 11 colleges and universities, four of which are within five miles of the RIT campus, Rochester provides unsurpassed educational and cultural opportunities. Home to more than 1 million people, the greater Rochester metropolitan area is one of America's top-rated places to live, work, and play. Our four-season climate is perfect for a variety of activities such as snow skiing, sailing, hiking, cycling, and kayaking. The city provides an incredible backdrop for higher learning, career growth, high-tech start-ups, and arts and culture.

Here is just a sampling of what Rochester has to offer:

## Sports and Recreation

---

Rochester was rated the best minor league sports market by *Street & Smith's Sports Business Journal*. Take a look at our local teams:

**Rochester Americans**, the AHL affiliate of the NHL's Florida Panthers

**Rochester Red Wings**, the Triple-A affiliate of Major League Baseball's Minnesota Twins

**Raging Rhinos**, a United Soccer League First Division professional soccer team

**Knighthawks** (indoor) and **Rattlers** (outdoor), professional lacrosse teams

**Razor Sharks**, 2005-06 American Basketball Association Champions

**Wegman's LPGA**, hosted at Locust Hill Country Club, features the world's best female golfers.

Other great recreational outlets:

- Golf Digest has ranked Rochester as one of the top 40 "Best Golf Towns in America," plus it's a hot spot for disc golf as well.
- Rochester has 12,000 acres in its park system, great for hiking, biking, and cross-country skiing.
- Bristol Mountain Winter Resort and Swain Ski and Snowboard Resort offer intense downhill skiing and snowboarding.
- Indulge in boating, kayaking, and more on the shores of three major bodies of water: Lake Ontario, the Genesee River, and the historic Erie Canal.
- Nearby Watkins Glen International hosts NASCAR Sprint Cup, NASCAR Nationwide Series, Craftsman Truck Series, and Indy Car races.

## Music and the Arts

---

**Downstairs Cabaret Theatre**, offering live, professional theater

**Dryden Theater**, which screens rare silent and popular films from the Motion Picture Collection at George Eastman House

**Finger Lakes Wine and Culinary Center**, a celebration of New York wine and food, created through a partnership of RIT's School of Hospitality and Service Management, Wegmans Food Markets, Constellation Brands, and the New York Wine & Grape Foundation

**Garth Fagan Dance**, the internationally acclaimed modern dance company

**George Eastman House**, the National Historic Landmark home and gardens of Kodak founder George Eastman and the world-renowned international museum of photography and film

**Geva Theatre**, the most well-attended regional theater in New York state

**The Little Theatre**, which features American independent and foreign films and is one of the most widely known "art house" movie theatres in the country

**Memorial Art Gallery**, which explores 50 centuries of world art

**Rochester Broadway Theatre League**, which hosts national Broadway tours

**Rochester International Jazz Festival**, one of the nation's largest and fastest growing music festivals. Drawing fans from all across the United States and around the world, the festival includes more than 500 artists and more than 100 concerts.

**Rochester Museum and Science Center**, a hands-on, educational museum exploring science and technology, the natural environment, and the region's cultural heritage

**Rochester Philharmonic Orchestra**, the only major orchestra in the country supported by a mid-sized city; winner of the 2006 ASCAP Award for Adventurous Programming

**Seneca Park Zoo**, a public exhibition of animals in naturalistic environments

**Sonnenberg Gardens**, one of America's most extensively maintained country estates

**Strasenburgh Planetarium**, where you can enjoy a laser show or giant-screen film beneath a 65-foot dome—one of the world's largest

**Strong National Museum of Play**, the first and only major museum in the world devoted to the study and interpretation of play

## **Events and Festivals**

---

**Clothesline Arts Festival**, a juried artists' showcase and sale hosted by the Memorial Art Gallery

**Corn Hill Arts Festival**, a national two-day arts and crafts festival

**High Falls Film Festival**, showcasing exceptional work by women in all areas of film and video

**Lilac Festival**, celebrates the arrival of spring with Rochester's 1,200 lilac bushes in Highland Park

## **The Deaf Community**

---

**Northeast Deaf Recreation, Inc. (DeafRec)**, which offers recreation and education opportunities for deaf, hard-of-hearing, and hearing populations

**Rochester Recreation Club for the Deaf, Inc.**, a hub for the greater Rochester community

**Open caption movies**, available at a number of cinemas in Rochester

## **Learn more**

---

To learn more about the Rochester area, visit these websites:

### **City of Rochester**

[www.ci.rochester.ny.us](http://www.ci.rochester.ny.us)

### **Greater Rochester Visitors Association**

[www.visitrochester.com](http://www.visitrochester.com)

### **The Democrat and Chronicle Newspaper**

[www.democratandchronicle.com](http://www.democratandchronicle.com)

### **Rochester Business Journal**

[www.rbj.net](http://www.rbj.net)

### **City Guide to Rochester**

[www.inforochester.com](http://www.inforochester.com)

### **Greater Rochester International Airport**

[www.monroecounty.gov/airport-index.php](http://www.monroecounty.gov/airport-index.php)

# Trustees, Administration, and Faculty

## Trustees

**Richard T. Aab**, Vice Chairman, PAETEC Corporation

**Willem Appelo**, Senior Vice President, Xerox Corporation

**Daniel J. Bader**, BBUB '87, ICSS '85, President, Helen Bader Foundation, Inc.

**Donald N. Boyce**, BBUB '67, Retired Chairman, IDEX Corporation

**Andrew N. Brenneman**, BBUB '88, Senior Account Executive, Sprint Nextel; NTID NAG Representative

**Charles S. Brown Jr.**, MBA '79, Director for the Rochester Area Colleges Center for Excellence in Math and Science, Nazareth College

**William A. Buckingham**, BBUB '64, Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Retired Executive Vice President, M&T Bank

**David J. Burns**, President and Chief Operating Officer, Ex One Corporation

**Lawrence D. Burns**, Vice President of Research Development and Strategic Planning, General Motors Corporation

**Ann L. Burr**, Senior Vice President and General Manager, Frontier Communications; Vice President for Government and Regulatory Affairs, Citizen Communications

**Essie L. Calhoun**, Chief Diversity Officer and Director, Community Affairs Vice President, Eastman Kodak Company

**Arunas A. Chesonis**, Chairman and Chief Executive Officer, PAETEC Communications  
**Thomas Curley**, MBA '77, President and Chief Executive Officer, The Associated Press

**William W. Destler**, Ph.D., President, Rochester Institute of Technology

**Sudhakar G. Dixit**, MBA '74, Chairman, Newtux Industries, Inc.

**Donna J. Ehrhart**, Professor of Computer Information Systems and Business, Genesee Community College; Representative, Women's Council of RIT

**Nancy L. Fein**, SMAM '76, Vice President of Lexus Service, Parts, Customer Satisfaction and Training, Toyota Motor Sales, USA

**B. Thomas Golisano**, Chairman, Paychex, Inc.

**Arthur A. Gosnell**, Chairman and Chief Executive Officer, Stonehurst Capital LLC

**Bart G. Guerreri**, BS '67, Chairman and CEO, DSD Laboratories, Inc.

**Brian H. Hall**, MBA '78, Retired Vice Chairman, The Thomson Corporation

**Jeffrey K. Harris**, '75 BS, Photographic Science and Instrumentation, Corporate Vice President, Lockheed Martin

**Susan R. Holliday**, MBA '85, President and Publisher, Rochester Business Journal

**Jay T. Holmes**, Retired Executive Vice President and Chief Administrative Officer, Bausch & Lomb, Inc.

**Samuel T. Hubbard Jr.**, Chairman, High Falls Brewing Company LLP

**Eric G. Johnson**, President and Chief Executive Officer, Baldwin Richardson Foods Company

**Thomas F. Judson Jr.**, Chairman and Chief Executive Officer, The Pike Company

**Kraig H. Kayser**, President and Chief Executive Officer, Seneca Foods Corporation

**Robert J. Kohler Jr.**, PHS '59, Retired Executive Vice President and General Manager, TRW Avionics & Surveillance Group

**Gary J. Lindsay**, BBUB '64, CPA

**Joseph M. Lobo**, MBA '95, President and Chief Executive Officer, JML Optical Industries, Inc.

**Lawrence J. Matteson**, Retired Vice President, Imaging and Information Systems, Eastman Kodak Company

**Elizabeth D. Moore**, Partner, Nixon Peabody LLP

**Michael P. Morley**, BBUB '69, Chair, Board of Trustees, Rochester Institute of Technology; Retired Chief Administrative Officer and Executive Vice President, Eastman Kodak Company

**Harold M. Mowl Jr.**, Superintendent/CEO, Rochester School for the Deaf; NTID National Advisory Group Representative

**Brian P. O'Shaughnessy**, CH BS '81, MS '84, Shareholder, Buchanan Ingersoll & Rooney PC; RIT Alumni Network Board Representative

**Sandra A. Parker**, Chief Executive Officer, Rochester Business Alliance, Inc.

**Wolfgang Pfizenmaier**, Retired Member of the Management Board, Heidelberger Druckmaschinen AG

**Susan M. Puglia**, Vice President, Technical Support and Quality, IBM Corporation

**Thomas S. Richards**, Corporate Counsel, City of Rochester

**Susan J. Riley**, BBUA '81, Executive Vice President, The Children's Place

**Richard E. Sands**, Ph.D., Chairman and Chief Executive Officer, Constellation Brands, Inc.

**Janet F. Sansone**, Chief Management Officer, The United States Government Printing Office

**Carl E. Sassano**, L '72, Executive Chairman, Transcat, Inc.

**E. Philip Saunders**, Chairman, Genesee Regional Bank and Griffith Energy Inc.

**Frank S. Sklarsky**, BS '78, BS, Chief Financial Officer and Executive Vice President, Eastman Kodak Company

**John M. Summers**, Chief Executive Officer, Jasco Tools, Inc.

**Kevin J. Surace**, '85, CEO, Serious Materials

**Sharon Ting**, Partner, Axialent, Inc.

**Donald J. Truesdale**, BS '87, Partner, Goldman, Sachs and Co.

**Judy B. von Bucher**

**Chester N. Watson**, General Auditor, General Motors Corporation

**Robert D. Wayland-Smith**, Retired Vice President and Manager, Upstate Trust and Investment Division, Chase Manhattan Bank, NA

**Christine B. Whitman**, Vice Chair, Board of Trustees, Rochester Institute of Technology; Chairman and CEO, Complemar Partners, Inc.

**Thomas C. Wilmot**, Chairman, Wilmorite Management Group LLC

**Ronald L. Zarrella**, Vice Chair, Board of Trustees, Rochester Institute of Technology; Chairman Emeritus, Bausch & Lomb, Inc.

## Emeriti Board Members

**Burton S. August**, LHD '95, Honorary Chair, Board of Trustees, Rochester Institute of Technology; Retired Vice President, Monro Muffler Brake, Inc.

**Bruce B. Bates**, Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Senior Vice President, Smith Barney

**Richard T. Bourns**, Retired Senior Vice President, Eastman Kodak Company

**Joseph C. Briggs**, Retired Vice President, Marketing, Lawyers Cooperative Publishing Company

**Paul W. Briggs**, Retired Chairman and Chief Executive Officer, Rochester Gas and Electric Corporation

**Colby H. Chandler**, Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Retired Chairman and Chief Executive Officer, Eastman Kodak Company

**Mary Lu Clark**

**Ada Frances Duffus**

**Richard H. Eisenhart**, Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Retired Chairman, R.H. Eisenhart, Inc.  
**Margie Fitch**

**James S. Gleason**, Chairman, Gleason Corporation

**Lucius R. Gordon**, LHD '99, Retired Chairman, Mixing Equipment Company, Inc.

**Thomas H. Gosnell**, LHD '96, Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Retired Chairman and Chief Executive Officer, Lawyers Cooperative Publishing Company

**Klaus Gueldenpfennig**, MBA '77, MSEE '74, President and Chairman, Redcom Laboratories, Inc.

**Alfred M. Hallenbeck**, Partner, Ward Norris Heller & Reidy LLP

**John D. Hostutler**, Retired President, Industrial Management Council

**Frank M. Hutchins**, Honorary Vice Chair and Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Retired Chairman, Hutchins/Young and Rubicam

**Bruce R. James**, PPR '64, Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Retired Public Printer of the United States, United States Government Printing Office; President & CEO, Nevada New-Tech Inc.

**Herbert W. Jarvis**, Former President and Chief Executive Officer, Sybron Corporation

**Roger W. Kober**, ME '84, Retired Chairman and Chief Executive Officer, Rochester Gas and Electric Corporation

**Thomas C. McDermott**, Retired Chairman, Chief Executive Officer and President, Goulds Pumps, Inc.

**Ann M. Mulligan**

**Jane Ratcliffe Pulver**

**Harris H. Rusitzky**, BS '56, MS '91, President, The Greening Group

**Frederick T. Tucker**, EL '63, Retired Executive Vice President and Deputy to the Chief Executive Officer, Motorola, Inc.

**William A. Whiteside Jr.**, Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Retired Partner, Fox, Rothschild, O'Brien & Frankel

## Honorary Board Members

**Catherine B. Carlson**

**Robert D. Davila**, Ph.D., President, Gallaudet University

**Ernest J. Del Monte**, Chairman, E. J. Del Monte Corporation

**William B. Hale**, Retired Vice President, Lawyers Cooperative Publishing Company

## Officers

**William W. Destler**, BS, Ph.D., President

**Jeremy Haefner**, BA, MA, Ph.D., Provost and Senior Vice President for Academic Affairs

**Donald Boyd**, BA, MS, Ph.D., Vice President, Research

**Lisa Cauda**, BS, MA, Vice President, Development and Alumni Relations

**Mary-Beth Cooper**, BS, M.Ed., MBA, Ph.D., Vice President, Student Affairs

**T. Alan Hurwitz**, BS, MS, Ed.D., President, National Technical Institute for the Deaf, Vice President and Dean, RIT

**Katherine J. Mayberry**, BA, MA, Ph.D., Vice President, Special Projects

**James G. Miller**, BS, MS, Ph.D., Senior Vice President, Enrollment Management and Career Services

**Deborah M. Stendardi**, BA, MPA, Vice President, Government and Community Relations

**James H. Watters**, BS, MA, Ph.D., Senior Vice President, Finance and Administration

## Office of the President

**Karen Barrows**, BS, MBA, Chief of Staff

**Alfreda Brown**, BS, MS, Ed.D., Interim Chief Diversity Officer

**Barry Culhane**, BA, Ed.D., Executive Assistant to the President

**Robert Finnerty**, BA, MS, Chief Communications Officer

**Lee Tyman**, BA, MA, Ombudsperson

## Deans

**Jorge L. Díaz-Herrera**, BS, MS, Ph.D., B. Thomas Golisano College of Computing and Information Sciences

**T. Alan Hurwitz**, BS, MS, Ed.D., President, National Technical Institute for the Deaf, Vice President and Dean, RIT

**Sophia Maggelakis**, BS, MS, Ph.D., Interim Dean, College of Science

**Harvey J. Palmer**, BS, Ph.D., PE, Kate Gleason College of Engineering

**Ashok Rao**, MS, Ph.D., E. Philip Saunders College of Business

**Frank J. Cost**, BS, Eisenhower College; MS, Rochester Institute of Technology—Associate Dean; Professor

**Robert Ulin**, BA, MA, Ph.D., College of Liberal Arts

**H. Fred Walker**, BS, MBA, MOE, Ph.D., College of Applied Science and Technology

**Andrew Moore**, BA, MA, Dip. Arch., Ph.D., Graduate Studies

**Mustafa A.G. Abushagur**, BSEE, MSEE, Ph.D., President, RIT Dubai

**Christopher Hall**, BS, MS, Ph.D., President, American University in Kosovo

**Donald W. Hudspeth**, BC, President/Dean, American College of Management and Technology

## Division of Academic Affairs

**Jeremy Haefner**, BS, MA, Ph.D., Provost and Senior Vice President for Academic Affairs

**Donald Boyd**, Ph.D., Vice President for Research

**Eulas Boyd**, Assistant Provost for Student Success

**Christine M. Licata**, BS, MS, Ed.S., Ed.D., Senior Associate Provost

**Chandra McKenzie**, BS, MS, MLS, Assistant Provost and Director, RIT Libraries

**Nabil Nasr**, BS, MS, M.Eng., Ph.D., Assistant Provost, Director of CIMS and Director of Golisano Institute of Sustainability

**Lynn Wild**, BS, M.Ed., Ph.D., Assistant Provost for Faculty Success

**Susan Provenzano**, BS, Director of Operations

## Distinguished Professorships

### College of Applied Science and Technology

**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: John Morelli

#### **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: Maureen S. Valentine

#### **E. Philip Saunders College of Business**

##### **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

#### **Kate Gleason College of Engineering**

##### **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

##### **Gleason Professor**

Established: 1993  
Donor: Gleason Memorial Fund  
Purpose: To provide for a faculty member to lead a research and development program in electrical engineering.  
Held by: open

##### **Kate Gleason Chair**

Established: 1999  
Donor: Gleason Foundation  
Purpose: To honor Kate Gleason and increase the visibility of engineering for young women  
Held by: open

##### **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 Micro-electronic Engineering Department and to develop new methods of manufacturing computer chips  
Held by: Bruce W. Smith

#### **College of Imaging Arts and Sciences**

##### **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 Science**

##### **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 long-time 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: Stefi Baum

## Faculty

### 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; Miller Chair—Professor

**Alfreda Brown**, BS, Roberts Wesleyan College; MS, Rochester Institute of Technology; Ed.D., Nova Southeastern University — Assistant Dean for Recruitment and Retention

**Karin Edinger**, GCDFI, BS, State University College at Brockport; MS, Rochester Institute of Technology—Assistant Dean of Academics; Adjunct Professor

### Civil Engineering Technology/Environmental Management and Safety

#### Civil Engineering Technology

**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; PE—Professor Emeritus

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

**Frank Hanna**, B.Sc., M.Sc., University of Baghdad (Iraq); Ph.D., University of Wales College of Cardiff (United Kingdom)—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

### 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, CIH, MS, BS, Central Missouri State University—Graduate Program Coordinator; Associate Professor

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

#### Adjunct Faculty

**Teresa Wolcott**, BS, State University of New York at Buffalo

**Alan Knauf**, BSCE, Massachusetts Institute of Technology; JD, University of Michigan Law School

**Ed Mullen**, BS, Clarkson University

**Michael Pilla**, MS, Rochester Institute of Technology

**George Thomas**, BS, Clarkson University; MS, Johns Hopkins University

**Jason Vigil**, BSCET, Rochester Institute of Technology; MSCE, University of North Carolina; PE

**Tom Wickerham**, BA, Thiel College

### 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 Maryland 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 Maryland; MSEE, Massachusetts Institute of Technology; Ph.D., Purdue University—Telecommunications Engineering Technology Program Chair; Professor

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

**Thomas Young**, BA, Hunter College; MS, New York University; MS, Rochester Institute of Technology—Professor

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

### Manufacturing and Mechanical Engineering Technology/Packaging Science

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

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

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

**Phillip J. Batchelor**, BSME, Marquette University; MSME, University of Illinois—Lecturer

**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—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

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

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

**George H. Sutherland**, BSME, University of Alberta; M.Eng., McMaster University; Ph.D., Stanford University; PE—Professor

**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—Assistant 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

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

**Thomas Voss**, BS, MS, Michigan State University; Ph.D., University of Minnesota—Packaging Science Program Chair; Associate Department Chair; Associate Professor

## Adjunct Faculty

**Glen Alexis**, BS, MS, University of Louisville

**Terry Antinora**, BS, MS, Rochester Institute of Technology

**Duane Beck**, BS, State University of New York Empire State College; MS, Rochester Institute of Technology; Ph.D., LaSalle University

**Dominic T. Bozzelli**, BS, University of Notre Dame; MS, Rochester Institute of Technology; MS, State University College at Brockport

**Gary J. DeAngelis**, BS, MS, University of Lowell

**Chris Donnelly**, BS, MS, Rochester Institute of Technology

**Ilya Grinberg**, MSEE, Lvov Polytechnic Institute (Ukraine); Ph.D., Moscow Institute of Civil Engineering (Russia)

**Tim Grove**, BS, Roberts Wesleyan College; MS, Rochester Institute of Technology

**Joel Hallas**, BSEE, University of Connecticut; MSEE, Northeastern University

**Frank Hubbell**, BT, Rochester Institute of Technology

**Alan Kaminsky**, BS, Lehigh University; MS, University of Michigan

**Robert Keiffer**, BS, Clarkson University; MS, Syracuse University

**David LaRue**, AAS, Monroe Community College; BS, Rochester Institute of Technology

**Jeff Lillie**, BS, Rochester Institute of Technology; MS, University of Rochester

**Bruce Link**, BS, Rochester Institute of Technology; MSEE, Binghamton University

**John Link**, BS, Rochester Institute of Technology

**Giddi Lissai**, BS, Ben-Gurion University (Israel); MS, Rochester Institute of Technology

**Eldred L. Majors**, BS, Rochester Institute of Technology

**Ann Mary Masterson**, BS, Clarkson University; MBA, University of Rochester

**Sidney McQuary**, BS, MS, Ph.D., University of Connecticut

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

**Francesca Polo**, BS, MS, Rochester Institute of Technology

**David A. Portzer**, BA, Park College; MS, Temple University

**Charles Ridler**, BS, MS, Rochester Institute of Technology

**Alfred M. Rodgers**, AAS, Alfred State College; BS, Rochester Institute of Technology

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

**John Todd Schueckler**, BS, Rochester Institute of Technology; MS, Rensselaer Polytechnic Institute

**Lisa Talty**, BS, MBA, Rochester Institute of Technology

**Donald Tripp**, BS, Syracuse University

**Rick Wyffels**, BS, MS, Rochester Institute of Technology

**Dennis E. Young**, BS, Michigan State University; MS, Rochester Institute of Technology

**Paul Zam**, BS, University of Toledo; MS, Rochester Institute of Technology

**Alan R. Zoyhowski**, BS, MS, Rochester Institute of Technology

## Hospitality and Service Management

**Barbra A. Cerio-Iocco**, RD, BS, MS, State University of New York at Buffalo—Associate Professor

**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; 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—Distinguished Lecturer

**Elizabeth A. Kmiecinski**, RD, BS, The Ohio State University; MS, University of Kentucky—Associate Professor

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

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

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

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

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

## Center for Multidisciplinary Studies

**Mary Boyd**, BA, Earlham College; MS, University of Iowa—Associate Director; Assistant Professor

**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—Faculty Emeritus

**Thomas F. Moran**, BSME, California State Polytechnic College; MSME, California State College at Long Beach—Associate Professor

**James Myers**, BS, MS, Rochester Institute of Technology; Ph.D., University of Michigan—Director; Professor

**Carol Romanowski**, BA, State University College at Plattsburgh; BS, MS, Ph.D., University at Buffalo—Assistant Professor

**Brian Tomaszewski**, BA, State University of New York at Albany; MA, State University of New York at Buffalo; Ph.D., Pennsylvania State University—Assistant Professor

## Reserve Officer Training Corps

### Army ROTC

**Lt. Col. Lynn Lubiak**, BS, Old Dominion University; MPA, Appalachian State University—Professor

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

**Capt. Monique Barnhart**, BS, United States Coast Guard Academy—Assistant Professor

**Sgt. First Class Scott Briggs**, Training NCO—Instructor

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

### Air Force ROTC

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

**Capt. Timothy Arsenault**, BS, Southern University; MS, Troy University—Assistant Professor

**Capt. Patricia Skutnik**, BS, University of Maryland—Assistant Professor

## E. Philip Saunders College of Business

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

**William H. Dresnack**, BS, Long Island University; MS, Binghamton University; JD, University of Buffalo—Senior Associate 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

**Kathleen A. Ozminkowski**, BS, MBA, Rochester Institute of Technology—Assistant Dean for Student Services

**Jerry H. Curnutt**, AB, William Jewell College; MS, Ph.D., University of Illinois—Assistant Dean for Administration

### Accounting

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

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

**Khondkar E. Karim**, B.Com., M.Com., University of Dhaka (Bangladesh); MSA, Eastern Michigan University; DBA, Mississippi State University; CPA, Mississippi—Zutes Fellow, Professor

**Francis E. Kearns**, AB, Cornell University; BD, Harvard University; MBA, Ph.D., State University of New York at Buffalo; CPA, New York—Assistant Professor

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

**Wayne J. Morse**, BBA, Siena College; MBA, Cornell University; Ph.D., Michigan State University; CPA, Illinois—Professor

**Bruce L. Oliver**, BBA, MBA, University of Cincinnati; Ph.D., University of Washington—Director, Saunders College Institute for Business Ethics and Corporate Social Responsibility; Professor

**Daniel D. Tesson**, 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; MS, Ph.D., Union College—Professor

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

**William J. Stevenson**, BIE, 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**, BS, 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—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

**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—Assistant Professor

**Martin Lawlor**, BS, State University of New York at Buffalo; MBA, Rochester Institute of Technology—Visiting Lecturer

**Steven Luxmore**, BA, MA, University of Guelph; Ph.D.; University of Toronto—Visiting 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., Binghamton University—Assistant Professor

**Sandra L. Rothenberg**, BS, Syracuse University; MS, Ph.D., Massachusetts Institute of Technology—Associate Professor

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

**Zhi Tang**, BS, Shandorun University; MS, Fudon University (China); Ph.D., University of Alabama—Zutes Fellow; 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



## 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

**Jack S. Cook**, BS, MA, MBA, University of South Dakota; MS, Ph.D., Washington State University—Associate Professor

**Daniel A. Joseph**, BS, Niagara University; MA, State University of New York at Albany; MBA, Ph.D., State University of New York at Buffalo—Associate Professor

**Koffi N'Da**, BS, Abidjan, Côte d'Ivoire; MS, Ph.D., Laval University—Assistant 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—Associate Professor

## Marketing

**Robert B. Boehner**, BA, MA, Siena College; JD, University of North Carolina at Chapel Hill—Visiting 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—Assistant Professor

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

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

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

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

**Stanley M. Widrick**, BS, Clarkson College; MBA, State University of New York at Buffalo; Ph.D., Syracuse University—Senior Associate Dean, Professor

## B. Thomas Golisano College of Computing and Information Sciences

**Jorge L. Diaz-Herrera**, Lic., Universidad Centro Occidental (Venezuela); MS, Ph.D., University of Lancaster (UK)—Dean; Professor

**Wiley R. McKinzie**, BA, University of Wichita; MS, State University of New York at Buffalo—Vice Dean; Professor

## Computer Science

**Paul T. Tymann**, BS, MS, Syracuse University—Department Chair; Professor

**Reynold Bailey**, BS, Midwestern State University; MS, Ph.D., Washington University—Assistant Professor

**Ivona Bezakova**, BS, Comenius University (Slovakia); MS, Ph.D., University of Chicago—Assistant Professor

**Hans-Peter Bischof**, BS, MS, University of Ulm (Germany); Ph.D., University of Osnabrück (Germany)—Graduate Program Coordinator; Associate Professor

**Zack Butler**, BS, Alfred University; Ph.D., Carnegie Mellon University—Assistant Professor

**Roxanne Canosa**, BS, State University College at Brockport; MS, Ph.D., Rochester Institute of Technology—Assistant Professor

**Warren Carithers**, BS, MS, University of Kansas—Associate Professor

**Henry Etlinger**, BS, University of Rochester; MS, Syracuse University—Undergraduate Program Coordinator; Associate Professor

**Matthew Fluet**, BS, Harvey Mudd College; Ph.D., Cornell University—Assistant Professor

**Roger S. Gaborski**, BS, MS, State University of New York at Buffalo; Ph.D., University of Maryland—Professor

**Joe Geigel**, BS, Manhattan College; MS, Stevens Institute of Technology; Ph.D., George Washington University—Associate Professor

**James Heliotis**, BS, Cornell University; Ph.D., University of Rochester—Professor

**Edith Hemaspaandra**, BS, MS, Ph.D., University of Amsterdam (Netherlands)—Professor

**Christopher Homan**, AB, Cornell University; MS, Ph.D., University of Rochester—Assistant Professor

**Trudy Howles**, BS, MS, Rochester Institute of Technology; Ph.D., Nova Southwestern University—Associate Professor

**Alan Kaminsky**, BS, Lehigh University; MS, University of Michigan—Associate Professor

**Fereydoun Kazemian**, BS, Queen Mary College (UK); MS, Pittsburgh State University; Ph.D., Kansas State University—Associate Professor

**Minseok Kwon**, BS, MS, Seoul National University (South Korea); Ph.D., Purdue University—Assistant Professor

**Xumin Liu**, BE, Dalian University (China); ME, Jinan University (China); Ph.D., Virginia Polytechnic Institute—Assistant Professor

**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 University—Assistant Professor

**Leonid Reznik**, Degree of Electronics, Leningrad Institute of Aeronautical Construction (Russia); MS, St. Petersburg Aircraft Academy (Russia); Ph.D., St. Petersburg Polytechnic Institute—Professor

**Axel Schreiner**, MS, Northern Illinois University; Ph.D., University of Illinois—Professor

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

**Richard Zanibbi**, BA, MS, Ph.D., Queens University (Canada)—Assistant Professor

## School of Informatics

**Luther Troell**, BS, MA, Texas A&M University; Ph.D., University of Texas at Austin—School Director; Professor

## Information Sciences and Technologies

**Jeffrey A. Lasky**, BBA, City College of New York; MBA, City University of New York; MS, University of Minnesota—Department Chair; Professor

**Catherine I. Beaton**, BA, B.Ed, MITE, Dalhousie University (Canada)—Associate Professor

**Dianne P. Bills**, BA, University of Rochester; MS, Rochester Institute of Technology—Graduate Program Coordinator; Associate Professor

**Daniel S. Bogaard**, BFA, Indiana University; MS, Rochester Institute of Technology—Associate Professor

**Deborah Coleman**, AAS, Rochester Institute of Technology; BS, Empire State College; MS, Rochester Institute of Technology—Associate Professor

**Michel Floeser**, AAS, BS, MS, Rochester Institute of Technology—Lecturer

**Anne Haake**, BA, Colgate University; MS, University of South Carolina; MS, Rochester Institute of Technology—Associate Professor

**Edward Holden**, BA, State University College at Oswego; MBA, Rochester Institute of Technology—Associate Professor

**Anthony Jefferson**, BS, State University College at Oswego; MS, Rochester Institute of Technology—Lecturer

**Jai Kang**, BS, Seoul National University (South Korea); MA, Kent State University; MS, Georgia Institute of Technology; Ph.D., State University of New York at Buffalo—Associate Professor

**James Leone**, BS, University of Cincinnati; MA, Ph.D., Johns Hopkins University—Professor  
**Rayno Niemi**, BS, MS, Ph.D., Rensselaer Polytechnic Institute—Professor

**Ronald Perry**, B. Tech, MS, Rochester Institute of Technology—Professor

**Evelyn P. Rozanski**, BS, State University College at Brockport; MS, Syracuse University; Ph.D., State University of New York at Buffalo—Professor

**Jeffrey Sonstein**, BA, MA, New College of California—Assistant Professor

**Nicholas Thireos**, BS, Wabash College; MS, Utah State University—Medical Informatics Program Director; Associate Professor

**Ronald P. Vullo**, BS, LeMoyné College; Ed.M., Ph.D., University at Buffalo—Associate Professor

**Elissa M. Weeden**, BS, MS, Rochester Institute of Technology—Associate Professor

**Timothy Wells**, BS, Eastern Washington State University; MBA, California State University at Bakersfield—Associate Professor

**Michael A. Yacci**, BS, Ithaca College; MS, Rochester Institute of Technology; Ph.D., Syracuse University—Professor

**Qi Yu**, BS, Zhejiang University (China); M.E., National University of Singapore; Ph.D., Virginia Polytechnic Institute—Assistant Professor

**Stephen Zilora**, BS, University of Rochester; MS, New Jersey Institute of Technology—Associate Professor

### **Interactive Games and Media**

**Andrew Phelps**, BFA, Bowling Green State University; MS, Rochester Institute of Technology—Department Chair; Associate Professor

**Jessica Bayliss**, BS, California State University; MS, Ph.D., University of Rochester—Assistant Professor

**Kevin Bierre**, BA, State University College at Geneseo; MS, Cornell University and Rochester Institute of Technology—Associate Professor

**John A. Biles**, BA, MS, University of Kansas—Professor

**Nancy Doubleday**, BS, MS, Rochester Institute of Technology—Associate Professor

**Chris Egert**, BS, MS, Rochester Institute of Technology; Ph.D., University at Buffalo—Assistant Professor

**Gordon Goodman**, BS, State University of New York at Binghamton; MS, Rochester Institute of Technology—Professor

**Michelle Harris**, MPS, New York University—Assistant Professor

**Tona Henderson**, BS, Southwest Missouri State University; MS, University of Missouri—Associate Professor

**Jay Alan Jackson**, BS, MS, Ph.D., Florida State University—Associate Professor

**Stephen Jacobs**, BA, MA, New School for Social Research—Associate Professor

**Stephen Kurtz**, BA, University of Miami; MS, Rochester Institute of Technology—Professor

**Elizabeth Lane Lawley**, AB, MLS, University of Michigan; Ph.D., University of Alabama—Associate Professor

**Elouise Oyzon**, BFA, MFA, Rochester Institute of Technology—Associate Professor

**Jonathon Schull**, BS, Reed College; MA, Ph.D., University of Pennsylvania—Associate Professor

**David I. Schwartz**, BS, MS, Ph.D., University of Buffalo—Assistant Professor

**Erik Vick**, BS, MS, Ph.D., University of Central Florida—Assistant Professor

**Keith Whittington**, BS, Rensselaer Polytechnic Institute; MS, Nova Southeastern University—Associate Professor

### **Networking, Security, and Systems Administration**

**Sylvia Perez-Hardy**, BS, MBA, Cornell University—Department Chair; Associate Professor

**George Barido**, BS, State University College at Brockport; MS, Rochester Institute of Technology—Lecturer

**Charles B. Border**, BA, State University College at Plattsburgh; MBA, Ph.D., State University of New York at Buffalo—Associate Professor

**Tina Chapman-DaCosta**, BA, State University College at Brockport; MS, Rochester Institute of Technology—Assistant Professor

**Bruce H. Hartpence**, BS, MS, Rochester Institute of Technology—Associate Professor

**Lawrence Hill**, BS, MS, Rochester Institute of Technology—Assistant Professor

**Daryl Johnson**, BS, St. John Fisher College; MS, Rochester Institute of Technology—Associate Professor

**Daniel Kennedy**, BS, MS, Rochester Institute of Technology—Lecturer

**Peter Lutz**, BS, St. John Fisher College; MS, Ph.D., State University of New York at Buffalo—Professor

**Sharon P. Mason**, BS, Ithaca College; MS, Rochester Institute of Technology—Associate Professor

**Sumita Mishra**, BS, Patna University (India); BS, Ph.D., State University of New York at Buffalo—Assistant Professor

### **Software Engineering**

**J. Fernando Naveda**, BS, Instituto Tecnológico y de Estudios Superiores de Monterrey (Mexico); Ph.D., University of Minnesota—Department Chair; Professor

**Mark Ardis**, BA, Cornell University; MS, Ph.D., University of Maryland—Professor; Graduate Program Coordinator

**J. Scott Hawker**, BS, MS, Texas Technical University; Ph.D., Lehigh University—Assistant Professor

**Stephanie A. Ludi**, BS, MS, California Polytechnic State University at San Luis Obispo; Ph.D., Arizona State University—Assistant Professor

**Michael J. Lutz**, BS, St. John Fisher College; MS, State University of New York at Buffalo—Professor

**Y. Raghu Reddy**, BE, University of Madras (India); MS, Ph.D., Colorado State University—Assistant Professor

**Thomas Reichlmayr**, BS, MS, Rochester Institute of Technology—Associate Professor

**James Vallino**, BE, The Cooper Union; MS, University of Wisconsin; Ph.D., University of Rochester—Professor

### **Kate Gleason College of Engineering**

**Harvey J. Palmer**, BS, University of Rochester; Ph.D., University of Washington, PE—Dean; Professor

**N. Richard Reeve**, BS, MS, 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

**Kenneth J. Ruschak**, BS, Carnegie Mellon University; Ph.D., University of Minnesota—Research Professor

### **Computer Engineering**

**Andreas E. Savakis**, BS, MS, Old Dominion University; Ph.D., North Carolina State University—Department Head; Professor

**Sonia Lopez Alarcon**, BS, Ph.D., Complutense University of Madrid (Spain)—Assistant Professor

**Juan C. Cockburn**, BS, Universidad Nacional de Ingeniería (Peru); MS, Ph.D., University of Minnesota—Associate Professor

**Roy S. Czernikowski**, BEE, The Catholic University of America; ME, Ph.D., Rensselaer Polytechnic Institute—Professor

**Kenneth W. Hsu**, BS, National Taiwan Normal University; MS, Ph.D., Marquette University; PE—Professor

**Dhiresha 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

**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

**Pratapa V. Reddy**, BE, M.Tech., Osmania University (India); Ph.D., Indian Institute of Technology—Professor

**Muhammad E. Shaaban**, BS, MS, University of Petroleum and Minerals (Saudi Arabia); Ph.D., University of Southern California—Associate Professor

**Shanchieh J. Yang**, BS, National Chiao-Tung University (Taiwan); MS, Ph.D., University of Texas at Austin—Associate Professor

## **Electrical and Microelectronic Engineering**

**Sohail A. Dianat**, BS, Aria-Mehr University (Iran); MS, Ph.D., George Washington University—Professor, Interim Department Head

**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**, BS, University of Pennsylvania; MS, Ph.D., Vanderbilt University—Assistant Professor

**Dale E. Ewbank**, BS, MS, 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—Visiting Assistant Professor

**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—Assistant Professor

**Robert E. Pearson**, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York at Buffalo—Associate Professor

**Eric R. Peskin**, BS, Princeton University; Ph.D., University of Utah—Assistant 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

**Raghuveer Rao**, BS, Mysore University (India); ME, Indian Institute of Science; Ph.D., University of Connecticut—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—Associate 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**

**Jacqueline Reynolds Mozrall**, BS, Rochester Institute of Technology; MS, North Carolina State University; Ph.D., State University of New York at Buffalo—Department Head; Professor

**Robin R. Borkholder**, BS, MS, State University of New York at Buffalo—Lecturer

**Andrés L. Carrano**, BS, Universidad Católica 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—Brinkman Professor; Professor

**Marcos Esterman**, BS, MS, Massachusetts Institute of Technology; Ph.D., Stanford University—Assistant 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—Associate Professor

**Matthew M. Marshall**, BS, Rochester Institute of Technology; Ph.D., University of Michigan—Associate Professor

**Madhu R. Nair**, BS, Rochester Institute of Technology; MS, Lehigh University—Visiting Instructor

**Nabil Z. Nasr**, BS, Helwan University (Egypt); MS, Rutgers University; M.Eng., Pennsylvania State University; Ph.D., Rutgers University—Earl W. Brinkman Professor; 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—Assistant 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**, BS, 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

**Amy Hortop**, BS, Michigan Technological University; MS, Rochester Institute of Technology—Lecturer

**Satish G. Kandlikar**, BE, Marathwada University (India); M.Tech., Ph.D., Indian Institute of Technology—James E. Gleason Professor; Professor

**Mark H. Kempfski**, 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

**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

**Robert J. Stevens**, BS, Swarthmore College; MS, North Carolina State University; Ph.D., University of Virginia—Assistant Professor

**Benjamin Varela**, BS, Institute of Technology of Juarez (Mexico); MS, Ph.D., New Mexico State University—Associate Professor

**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—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—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

**Yen-Wen Lu**, BS, National Taiwan University; MS, University of Michigan; Ph.D., University of California at Los Angeles—Assistant Professor

**Zhaolin Lu**, BS, Chongqing 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

### **College of Imaging Arts and Sciences**

**Frank J. Cost**, BS, Eisenhower College; MS, Rochester Institute of Technology—Interim Dean; Professor

**Joan B. Stone**, BS, St. Lawrence University; MS, Syracuse University; Ed.D., University of Rochester—Director, Vignelli Center

**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—Associate 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—Assistant 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; MFA, Concordia University—Associate Professor



## Foundations Department

**Joyce Hertzson**, BFA, Rhode Island School of Design; MFA, Indiana University—Administrative Chair, Foundation; Professor

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

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

**Clarence Burton Sheffield Jr.**, BS, University of Utah; MA, University of Colorado at Boulder; Ph.D., Bryn Mawr College—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—Coordinator, Graduate Graphic Design; Associate Professor

**Alex Bitterman**, BS, M.Arch., State University of New York at Buffalo; Ph.D., University of New York at Buffalo—Assistant 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

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

**Therese M. Hannigan**, BFA, MS, Rochester Institute of Technology—Associate Professor

**Chris B. Jackson**, BFA, Alfred University; MFA, Rochester Institute of Technology—Associate Professor; Coordinator, Computer Graphics Design

**Charles F. Lewis**, B.Arch., Pratt Institute; M.Arch., State University of New York at Buffalo—Program Chair, Interior Design; Professor

**Bruce I. Meader**, BFA, MFA, Carnegie Mellon University—Program Chair, Graphic Design; Associate Professor

**Hye-Jin Nae**, BA, Sung Shin Women's University; BFA, University of Wisconsin; MFA, Rochester Institute of Technology—Assistant Professor

**Marianne O'Loughlin**, BA, St. Bonaventure University; BFA, MFA, Rochester Institute of Technology—Program Chair, New Media Design and Imaging; Associate Professor

**Alan Reddig**, BID, Syracuse University—Lecturer

**R. Roger Remington**, BFA, Rochester Institute of Technology; MS, University of Wisconsin—Professor

**Stan Rickel**, BID, Pratt Institute; MID, Syracuse University—Program Chair, Industrial Design; Associate Professor

**Marla Schweppe**, BA, University of Kansas; MA, The Ohio State University—Program Chair, 3D Digital Graphics; Professor

**Adam Smith**, BFA, MFA, Rochester Institute of Technology—Assistant Professor

## School for American Crafts

**Andy Buck**, BA, Virginia Commonwealth University; MFA, Rhode Island School of Design—Associate Professor

**Juan Carlos Caballero-Perez**, BFA, MFA, Rochester Institute of Technology—Associate Professor

**Robin Cass**, BFA, Rhode Island School of Design; MFA, Alfred University—Associate 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; The 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

**Carl Battaglia**, BA, Boston College; MFA, Syracuse University—Professor

**Jack Beck**, BA, Denison University; MFA, University of Iowa—Live Action Program Chair; Associate Professor

**Adrienne Carageorge**, BA, Florida State University; MFA, Ohio University—Associate Professor

**Ricardo Figueroa**, BS, MS, University of Puerto Rico, Mayaguez—Assistant Professor

**Tom Gasek**, BFA, Rochester Institute of Technology—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—Assistant Professor

**Stephanie Maxwell**, BA, University of California at Los Angeles; MFA, San Francisco Art Institute—Animation Chair; Professor

**Naomi Orwin**, BA, University of Chicago; MA, Institute of Transpersonal Psychology—Assistant Professor

**Alan Rhodes**, BFA, University of Washington; MFA, State University of New York at Buffalo—Assistant Professor

**Malcolm Spaul**, BS, St. Lawrence University; MFA, Rochester Institute of Technology—Administrative Chair; Professor

## School of Photographic Arts and Sciences

**Andrew Davidhazy**, BFA, MFA, Rochester Institute of Technology—Administrative Chair, Imaging and Photographic Technology; Professor

**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

**Denis Defibaugh**, BS, MS, Rochester Institute of Technology—Professor

**Stephen Diehl**, BS, University of Miami; BS, MS, Rochester Institute of Technology—Associate Professor

**William DuBois**, BFA, Ohio University; M.Ed., Bowling Green State University—Program Chair, Visual Media; Photographic Arts; Professor

**Mark Haven**, AB, Lebanon Valley College—Assistant Professor

**Angela Kelly**, Diploma, Trent Polytechnic; Diploma Ed., Mary Ward College; MA, Columbia College—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—Program Chair, Fine Art Photography; 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—Program Chair, Biomedical Photography; 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

**William Snyder**, BS, Rochester Institute of Technology—Program Chair, Photojournalism; Professor

**Christye Sisson**, BS, MS, Rochester Institute of Technology—Associate 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—Administrative Chair; Fawcett Distinguished Professor

**Patricia Albanese**, BA, MLS, State University College at Geneseo; MS, Rochester Institute of Technology—Gannett 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, Professor

**Twyla Cummings**, BS, MS, Wright State University; Ph.D., Union Institute—Graduate Program Coordinator; Associate Professor

**Franziska Frey**, MS, University of Zurich (Switzerland); Ph.D., Swiss Federal Institute of Technology—Associate 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—Assistant Professor

**Frank J. Romano**, BA, City University of New York—Professor Emeritus

**Scott Williams**, BA, Purdue University, Ph.D., Montana State University—Associate Professor

## College of Liberal Arts

**Robert C. Ulin**, BA, Whittier College; MA, Ph.D., New School for Social Research—Dean; Professor

**John Capps**, BA, St. John's College; MA, Ph.D., Northwestern University—Senior Associate Dean; Associate Professor

**Suzanne Graney**, AA, Finger Lakes Community College; BA, State University College at Geneseo; Ph.D., University of Oregon—Associate Dean; Associate Professor

**John S. Smithgall**, BA, Roberts Wesleyan College; MS, University of Rochester—Assistant Dean and Director of Student Services

## Communication

**Bruce A. Austin**, BA, Rider College; MS, Illinois State University; Ph.D., Temple University—Department Chair; Professor

**Susan B. Barnes**, BFA, Pratt Institute; MFA, Ph.D., New York University—Professor

**Keri Barone**, BS, MS, State University College at Brockport—Lecturer

**Valica Boudry**, BA, University of Minnesota; MA, University of Iowa; Ph.D., University of North Dakota—Assistant Professor

**Grant C. Cos**, BA, University of Massachusetts at Amherst; MA, Emerson College; Ph.D., Kent State University—Coordinator of Undergraduate Minors, Concentrations, and Service Courses; Associate Professor

**Robert D. Croog**, AB, Harvard University; JD, Columbia University—Visiting Associate Professor

**Andrea Allen Hickerson**, BA, Syracuse University; MA, University of Texas at Austin; Ph.D., University of Washington—Assistant Professor

**Diane S. Hope**, BS, State University College at Brockport; MS, Ph.D., State University of New York at Buffalo—William A. Kern Professor in Communications

**Keith Bernard Jenkins**, BA, University of Arkansas; MA, Ph.D., Florida State University—Associate Professor

**Wilma R. King**, BA, University of South Carolina; MA, Texas Southern University—Associate Professor

**Ki-Young Lee**, BA, Hanyang University (South Korea); MA, Northwestern University; Ph.D., Michigan State University—Assistant Professor

**David R. Neumann**, BA, Ithaca College; MA, Ph.D., Bowling Green State University—Professor

**Elizabeth Reeves O'Connor**, BS, MS, Rochester Institute of Technology—Lecturer

**Rudolph Pugliese**, BA, State University College at Oneonta; MA, State University College at Brockport; Ph.D., Temple University—Graduate Coordinator; Professor

**Patrick M. Scanlon**, BA, Albany State University; MA, Ph.D., University of Rochester—Coordinator of Undergraduate Degree Programs; Professor

**Susan J. Widrick**, BS, MS, Albany State University—Lecturer

**Tracy Worrell**, BA, Otterbein College; MA, University of Cincinnati; Ph.D., Michigan State University—Assistant Professor

## Criminal Justice

**John M. Klofas**, BA, College of the Holy Cross; MA, Ph.D., State University of New York at Albany—Department Chair; Professor

**Paul Brule**, BA, Wittenberg University; MS, Xavier University—Associate Professor

**Thomas C. Castellano**, BA, MA, Ph.D., State University of New York at Albany—Professor

**Judy Porter**, BA, University of Northern Colorado; MA, New Mexico State University; Ph.D., University of Nebraska at Omaha—Professor

**Christopher Schreck**, BA, University of Florida; MA, University of Arizona; Ph.D., Pennsylvania State University—Associate Professor

**Jason Scott**, BS, Roberts Wesleyan College; MA, Ph.D., State University of New York at Albany—Assistant Professor

**Laverne McQuiller Williams**, BS, Rochester Institute of Technology; JD, Albany Law School of Union University—Associate Professor

## Economics

**Michael J. Vernarelli**, AB, University of Michigan; MA, Ph.D., State University of New York at Binghamton—Department Chair; Professor

**Amit Batabyal**, BS, Cornell University; MS, University of Minnesota; Ph.D., University of California at Berkeley—Arthur J. Gosnell Professor in Economics

**Bharat Bhole**, Ph.D., University of Southern California—Assistant Professor

**Jeffrey Burnette**, Ph.D., State University of New York at Buffalo—Visiting Assistant Professor

**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

**Ayşe 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**, BComm, University College at Galway; MA, University College at Dublin (Ireland); MA, University of Wisconsin at Madison—Assistant Professor

**Thomas D. Hopkins**, BA, Oberlin College; MA, Ph.D., Yale University—Professor

**Hoyoung Lee**, BA, Seoul National University (South Korea); MA, Ph.D., University of Maryland—Professor

**Jeanette C. Mitchell**, BA, Westminster College; Ph.D., University of Utah—Associate Professor

**M. Jeffrey Wagner**, BA, University of Missouri; MA, Ph.D., University of Illinois—Associate Professor

## English

**Richard Santana**, AA, LaGuardia Community College; BA, City College; MA, Hunter College; Ph.D., City University of New York Graduate School and University Center—Department Chair; Associate Professor

**Doris A. Borrelli**, BA, Ph.D., Cornell University—Assistant 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 Professor

**Gail Gilberg**, BA, Alfred University; MS, Iowa State University; MFA, Bennington College—Lecturer

**Vincent F. A. Golphin**, BA, Sacred Heart College; MA, University of Dayton; Ph.D., Binghamton University—Assistant Professor

**Barbara Heifferon**, BA, MA, Ph.D., University of Arizona—Professor

**Lisa M. Hermsen**, BA, Briar Cliff University; MA, University of Missouri at Columbia; Ph.D., Iowa State University—Associate Professor

**Julie Johannes**, BA, State University College at Geneseo; MA, University of Rochester—Lecturer

**Barbara MacCameron**, MA, University of Colorado; MS, Syracuse University—Lecturer

**Katherine Mayberry**, BA, Smith College; MA, Ph.D., University of Rochester—Professor

**David S. Martins**, BA, St. Olaf College; MA, Northern Arizona University; Ph.D., Michigan Technological University—Associate Professor, Writing Director

**Elizabeth Mazzolini**, BA, The Ohio State University; MA, Ph.D., Pennsylvania State University—Assistant Professor

**Stanley D. McKenzie**, BS, Massachusetts Institute of Technology; MA, Ph.D., University of Rochester—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., University of Buffalo—Lecturer

**John Roche**, BA, University of Connecticut; MA, University College; Ph.D., State University of New York at Buffalo—Associate Professor

**Sandra E. Saari**, AB, Carleton College; MA, Ph.D., Occidental College—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—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

**Janet Zandy**, BA, Montclair State College; MA, University of Rochester; Ph.D., State University of New York at Buffalo—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—Associate Professor

**Edward Schell**, B.Mus.Ed., Westminster College; MM, Westminster Choir College—Associate Professor



## Foreign Language

**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—Assistant Professor

**Elisabetta D’Amanda**, BA, State University of New York; MA, Nazareth College of Rochester—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—Lecturer

**Masako Murakami**, BA, Portland State University; MA, The Ohio State University—Lecturer

**Roberto Perez**, BA, National University of La Pampa (Argentina); MA, Ph.D., Florida State University—Director of Foreign Language Technology

**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

**Frank Annunziata**, AB, Manhattan College; MA, City College of New York; Ph.D., The Ohio State University—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

**Pellegrino Nazzaro**, BA, P. Giannone; Ph.D., University of Naples (Italy)—Professor

**Ken R. Nelson**, BA, University of Connecticut; MA, Georgetown University; Ph.D., University of Virginia—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

## Material Culture Sciences

**William D. Middleton**, BA, University of California at San Diego; MA, San Francisco State University; Ph.D., University of Wisconsin at Madison—Interim Department Chair; Assistant Professor

**Elizabeth Goins**, BA, University of Delaware; Ph.D., University of London—Assistant Professor

**Tina Lent**, BA, MA, University of California at Los Angeles; Ph.D., University of Rochester—Professor

**Andrew M. T. Moore**, BA, MA, D.Phil., Oxford University (U.K.)—Professor

**Martha Morgan**, SB, Massachusetts Institute of Technology; Ph.D., University of Arizona—Assistant Professor

**Jason T. Younker**, BA, Cameron University; M.Ed., Oklahoma City University; MS, Ph.D., University of Oregon—Assistant Professor

## Philosophy

**Brian Schroeder**, BA, Edinboro College; M.Div., Princeton Theological Seminary; MA, Ph.D., State University of New York at Stony Brook—Department Chair; Professor

**Jesús Aguilar**, BA, Hampshire College and Universidad Veracruzana (Mexico); MA, Universidad Nacional Autónoma de México; Ph.D., McGill University—Assistant 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

**John Capps**, BA, St. John’s College; MA, Ph.D., Northwestern University—Associate Professor

**Timothy H. Engström**, BA, MA, Ph.D., University of Edinburgh—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

**Evan Selinger**, BA, Binghamton University; MA, University of Memphis; Ph.D., State University of New York at Stony Brook—Assistant Professor

**David B. Suits**, BA, Purdue University; MA, Ph.D., University of Waterloo (Canada)—Department Chair; Professor

**Katie Terezakis**, BA, Central Connecticut State University; MA, Ph.D., New School for Social Research—Assistant Professor

**Lawrence G. Torcello**, BA, State University College at Brockport; MA, Ph.D., State University of New York at Buffalo—Visiting Assistant Professor

## Political Science

**Paul H. Ferber**, BA, American University; M.Ph., Ph.D., George Washington University—Department Chair; Professor

**Joseph Fornieri**, BA, State University College at Geneseo; BA, Boston College; Ph.D., Catholic University of America—Associate Professor

**Edward Kannyo**, BA, Makerere University (Uganda); M.Phil., Ph.D., Yale University—Associate Professor

**Ivan Kenneally**, BA, State University of New York; MA, Ph.D., Yale University—Assistant Professor

**Hoyoung Lee**, BA, Seoul National University (South Korea); MA, Ph.D., University of Maryland—Professor

**Spencer Meredith**, BA, Swarthmore College; MA, Villanova University; Ph.D., University of Virginia—Assistant Professor

**John A. Murley**, BA, University of Dallas; MA, Ph.D., Claremont Graduate and University Center—Professor

**Sean Sutton**, MA, Ph.D., University of Dallas—Assistant Professor

## Psychology

**Andrew M. Herbert**, BS, McGill University; MA, Ph.D., University of Western Ontario (Canada)—Department Chair; Associate Professor

**Joseph S. Baschnagel**, BA, MA, Ph.D., State University of New York at Buffalo—Assistant Professor

**Kirsten Condry**, BA, Swarthmore College; Ph.D., University of Minnesota—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

**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

**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



## Science, Technology, and Society/Public Policy

**James J. Winebrake**, BS, Lafayette College; MS, Massachusetts Institute of Technology; Ph.D., University of Pennsylvania—Department Chair; Professor

**Robert Alexander**, BS, Duke University; MS, MPA, Indiana University at Bloomington; Ph.D., Syracuse University—Visiting Assistant Professor

**Deborah Blizzard**, BA, Smith College; MS, Ph.D., Rensselaer Polytechnic Institute—Associate 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—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

## Sociology and Anthropology

**Paul F. Grebinger**, BS, Columbia University; Ph.D., University of Arizona—Department Chair; Professor

**Brian P. Barry**, BA, St. John Fisher College; MSc, 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

**Christine Kray**, BA, New Mexico State University; Ph.D., University of Pennsylvania—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; Ph.D., University of Arizona—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

**Murli M. Sinha**, AB, Bihar University (India); MA, Patna University (India); MA, City College of New York; Ph.D., Cornell University—Professor

**Danielle Taana Smith**, BA, Dartmouth College; MBA, Saint Martin's College; Ph.D., University of South Carolina—Associate Professor

**Jason T. Younker**, BA, Cameron University; M.Ed., Oklahoma City University; MS, Ph.D., University of Oregon—Assistant Professor

## College of Science

**Sophia A. Maggelakis**, BS, MS, Ph.D., Old Dominion University—Interim Dean; Professor

**Laura Ellen Tubbs**, BA, Hood College; Ph.D., University of Rochester—Interim Associate Dean; Professor

**Catherine Mahrt-Washington**, BS, Niagara University; MS, Rochester Institute of Technology—Assistant Dean; College of Science Honors Advocate

**Kristen Waterstram-Rich**, BS, MS, Rochester Institute of Technology—Program Director, Premedical Studies; Professor

## School of Life Sciences

**Larry Buckley**, BA, University of Missouri at St. Louis; MS, Southern Illinois University at Edwardsville; Ph.D., Southern Illinois University at Carbondale—Associate Head of Life Sciences; Associate Professor

## Biological Sciences

**Dawn Carter**, BSc, Bothay University of Manchester; Ph.D., University of Nottingham (U.K.)—Lecturer

**Sandra Connelly**, BS, Juniata College; MS, University at Buffalo; Ph.D., Miami University of Ohio—Lecturer

**Jean A. Douthwright**, BA, Skidmore College; MS, Pennsylvania State University; MS, Ph.D., University of Rochester—Professor

**Irene M. Evans**, BA, University of Rochester; MS, Wesleyan University; Ph.D., University of Rochester—Professor

**Maureen C. Ferran**, BS, Fordham University; MS, Ph.D., University of Connecticut—Associate Professor

**G. Thomas Frederick**, BS, MS, Ph.D., The Ohio State University—Professor

**Elizabeth N. Hane**, BA, Rice University; MA, University of Kansas; Ph.D., Brown University—Associate Professor

**Bochiwe Hara-Kaonga**, BS, University of Malawi; MS, Ph.D., University of New Hampshire—Assistant Professor

**Andrew O. Hudson**, BS, Virginia Union University; Ph.D., Rutgers University—Assistant Professor

**Karl F. Korfmacher**, BA, Carleton College; MEM, Ph.D., Duke University—Director, Environmental Science; Associate Professor

**David A. Lawlor**, BA, University of Texas; MS, Ph.D., University of Texas Health Science Center at San Antonio—Associate Professor

**Michele Lennox**, AAS, Rochester Institute of Technology—Lecturer

**Jeffrey S. Lodge**, BA, University of Delaware; Ph.D., University of Mississippi—Associate Professor

**Douglas P. Merrill**, BS, Ph.D., State University of New York College of Environmental Science and Forestry—Professor

**Dina L. Newman**, BS, Cornell University; MS, Ph.D., University of Chicago—Assistant Professor

**Michael V. Osier**, BS, University of Vermont; Ph.D., Yale University—Assistant Professor

**Elizabeth Perry**, BS, State University College at Brockport; MS, Ph.D., University of Rochester—Lecturer

**Harvey Pough**, BA, Amherst College; MA, Ph.D., University of California—Professor

**Vincent M. Reyes**, BS, University of the Philippines; Ph.D., California Institute of Technology—Assistant Professor

**Robert H. Rothman**, BA, Ph.D., University of California at Berkeley; MA, California State University at San Diego—Professor

**Michael A. Savka**, BS, West Virginia University; MS, Ph.D., University of Illinois at Urbana-Champaign—Associate Professor

**Paul A. Shipman**, BS, MS, Emporia State University; Ph.D., Oklahoma State University—Associate Professor

**Gary R. Skuse**, BA, University of Rochester; Ph.D., Syracuse University—Director, Bioinformatics; Professor

**Hyla C. Sweet**, BS, Union College; Ph.D., University of Texas at Austin—Associate Professor

**Bolaji Thomas**, BS, MS, Ph.D., University of Lagos—Assistant Professor

**John M. Waud**, BS, Lehigh University; MS, University of Pennsylvania; Ph.D., Lehigh University—Professor

**Leslie Kate Wright**, BS, Rochester Institute of Technology; MS, Ph.D., University of Rochester—Assistant Professor

## Medical Sciences

**William Brewer**, BS, State University College at Cortland; MS, Empire State College—Lecturer

**Robert Osgood**, BS, Jackson State University; MS, Ph.D., University of Southern Mississippi—Assistant Professor

**Kristen Waterstram-Rich**, BS, MS, Rochester Institute of Technology—Director, Premedical Studies; Professor

## Clinical Chemistry

**James C. Aumer**, BS, MS, Michigan Technological University—Interim Program Director; Professor

## Clinical Faculty

**Richard M. Bayer**, Ph.D., Rutgers University—Rochester General Hospital

**Yasmin Kabir**, BS, MS, Rochester Institute of Technology

**James F. Wesley**, BS, MS, Rochester Institute of Technology

## Physician Assistant

**Heidi Miller**, BS, PA-C, Alderson Broaddus College; MPH, University of Rochester—Program Director; Professor

**Nancy Valentage**, BS, PA-C, Gannon University; MS, Rochester Institute of Technology—Associate Director/Clinical Coordinator; Professor

**Cara F. Calvelli**, AB, Mount Holyoke College; MD, Cornell University Medical College—Assistant Professor

**John B. Oliphant**, BA, Messiah College; M.Ed., Elmira College; MHP, PA-C, Northeastern University—Clinical Coordinator

**Nancy Herbert**, BS, Rochester Institute of Technology—Clinical Data Coordinator

**Paul Levy**, BS, MD, The Ohio State University—Medical Director

**Joseph Nicholas**, BA, Cornell University; MD, University of Pittsburgh—Medical Education Consultant

**Peter P. Ciancaglini**, PharmD, Campbell University—Adjunct Faculty

## Clinical Faculty

Clinical faculty from a wide variety of local and regional medical centers, hospitals, and ambulatory practices serve as preceptors for physician assistant students during the internship phase of the program.

## Diagnostic Medical Sonography

**Hamad Ghazle**, BS, RDMS, Rochester Institute of Technology; MS, Ed.D., University of Rochester—Program Director, Professor

**Jodie Crowley**, BS, RDMS, Rochester Institute of Technology—Clinical Coordinator

**Vikram Dogra**, MD—Medical Director

**Susan Voci**, MD—Co-medical Director

## School of Mathematical Sciences

**Douglas S. Meadows**, BS, Stanford University; MS, New York University; Ph.D., Stanford University—Interim Head, School of Mathematical Sciences; Professor

**Anurag Agarwal**, BS, MS, Indian Institute of Technology; Ph.D., State University of New York at Buffalo—Assistant Professor

**Ephraim Agyingi**, BS, MS, University of Ilorin (Nigeria); Ph.D., University of Manchester (United Kingdom)—Assistant Professor

**David S. Barth-Hart**, BS, Syracuse University; MA, University of Rochester—Associate Professor

**William Basener**, BA, Marist College; Ph.D., Boston University—Associate Professor

**Maurino P. Bautista**, BS, Ateneo de Manila University (Philippines); MS, Ph.D., Purdue University—Professor

**Bernard Brooks**, BS, University of Toronto; MS, Ph.D., University of Guelph (Canada)—Associate Professor

**Manuela Campanelli**, Laurea in Mathematics, University of Perugia (Italy); Ph.D., University of Bern (Switzerland)—Associate Professor

**Patricia A. Clark**, SB, SM, Massachusetts Institute of Technology; Ph.D., University of Rochester—Professor

**Matthew Coppenbarger**, BS, University of Arizona; MA, Ph.D., University of Rochester—Associate Professor

**Joseph DeLorenzo**, BS, University of Alabama; MS, Polytechnic Institute of Brooklyn; Ph.D., Boston University—Visiting Assistant Professor

**Patricia Diute**, BA, MA, University of Rochester; Ph.D., Teaching Fellow, University of Rochester—Assistant Professor

**Alejandro B. Engel**, BS, Universidad de Chile; MS, Ph.D., State University of New York at Buffalo—Professor

**Joshua Faber**, BS, State University of New York at Stony Brook; Ph.D., Massachusetts Institute of Technology—Assistant Professor

**David L. Farnsworth**, BS, Union College; MA, Ph.D., University of Texas—Professor

**Raluca Felea**, BS, University of Iasi (Romania); Ph.D., University of Rochester—Assistant Professor

**Marvin H. Gruber**, BS, Brooklyn College; MA, Johns Hopkins University; MS, Rochester Institute of Technology; MA, Ph.D., University of Rochester—Professor

**Hassan Guclu**, BS, MS, Middle East Technical University (Turkey); Ph.D., Rensselaer Polytechnic Institute—Assistant Professor

**James J. Halavin**, BS, Clarkson University; MA, Ph.D., State University of New York at Buffalo—Professor

**Anthony J. Harkin**, BS, State University College at Brockport; MS, Massachusetts Institute of Technology; Ph.D., Boston University—Assistant Professor

**Akhtar Khan**, MS, Technical University Kaiserslautern (Germany); Ph.D., Michigan Technological University—Assistant Professor

**Chulmin Kim**, BS, Kyunghe University (South Korea); MS, Wichita State University; Ph.D., University of Iowa—Assistant Professor

**Seshavadhani Kumar**, BS, MS, University of Madras (India); Ph.D., University of Delaware—Professor

**Manuel Lopez**, AB, Princeton University; Ph.D., Wesleyan University—Assistant Professor

**Carlos Lousto**, MS, Universidad Nacional de la Plata (Argentina); Ph.D., Universidad de Buenos Aires—Associate Professor

**Carl V. Lutzer**, BS, Michigan State University; MA, Ph.D., University of Kentucky—Associate Professor

**Sophia A. Maggelakis**, BS, MS, Ph.D., Old Dominion University—Professor

**Carol E. Marchetti**, BS, Case Institute of Technology; MS, Weatherhead School of Management; MA, Ph.D., University of Rochester—Associate Professor

**James E. Marengo**, BA, MS, California State University; Ph.D., Colorado State University—Professor

**Darren A. Narayan**, BS, State University of New York at Binghamton; MS, Ph.D., Lehigh University—Associate Professor

**Richard J. Orr**, BS, John Carroll University; MS, Case Institute of Technology; MS, State University of New York at Buffalo—Professor

**Michael Radin**, BA, Rowan University; MS, Ph.D., University of Rhode Island—Associate Professor

**David Ross**, BA, Columbia College; Ph.D., N.Y.U. Courant Institute of Mathematical Sciences—Professor

**Harry M. Schey**, BS, Northwestern University; AM, Harvard University; Ph.D., University of Illinois—Professor

**Hossein Shahmohamad**, BS, MA, California State University at Long Beach; Ph.D., University of Pittsburgh—Associate Professor

**Likin Simon Romero**, BS, Universidad Nacional Autonoma de Mexico; Ph.D., West Virginia University—Assistant Professor

**Wanda Szpunar-Lojasiewicz**, BS, Jagiellonian University (Poland); MS, Ph.D., University of Cracow—Associate Professor

**Wondimu Tekalign**, BS, MS, Addis Ababa University (Ethiopia); Ph.D., State University of New York at Buffalo—Assistant Professor

**Yolande Tra**, BS, University of Madagascar; MS, University of Aabidjan (Côte d'Ivoire); MS, Ball State University; Ph.D., University of Missouri—Assistant Professor

**Christopher Wahle**, BS, MS, Illinois Institute of Technology; Ph.D., Northwestern University—Assistant Professor

**John Whelan**, BA, Cornell University; Ph.D., University of California at Santa Barbara—Associate Professor

**Tamas Wiandt**, BS, Jozsef Attila University (Hungary); Ph.D., University of Minnesota—Associate Professor

**Paul R. Wilson**, BA, MA, University of Cincinnati; Ph.D., University of Illinois—Professor

**Z. Jerry Yang**, BS, MS, Peking University (China); Ph.D., Princeton University—Assistant Professor

**Elmer L. Young**, BA, Amherst College; MS, Ph.D., The Ohio State University—Associate Professor

**Yosef Zlochower**, BS, Ph.D., University of Pittsburgh—Assistant Professor

## Department of Chemistry

**L. Paul Rosenberg**, BS, Bridgewater State College; Ph.D., University of New Hampshire—Department Head, Professor

**Alla Bailey**, BS, University of St. Petersburg (Russia); Ph.D., Russian Academy of Science—Lecturer

**Jeremy Cody**, BS, Indiana University of Pennsylvania; Ph.D., University of Rochester—Assistant Professor

**Michael Coleman**, BS, Ph.D., University of Buffalo—Visiting Assistant Professor

**Christina G. Collison**, BA, Colby College; Ph.D., University of Rochester—Associate Professor

**Christopher Collison**, BS, Ph.D., Imperial College, University of London—Assistant Professor

**Paul Craig**, BS, Oral Roberts University; Ph.D., University of Michigan—Professor

**Joseph P. Hornak**, BS, Utica College of Syracuse University; MS, Purdue University; Ph.D., University of Notre Dame—Professor

**Marvin L. Illingsworth**, BS, Lafayette College; Ph.D., University of Massachusetts—Professor

**Thomas Kim**, BS, Loyola College; Ph.D., University of Wisconsin at Madison—Associate Professor

**Andreas Langner**, BS, Ph.D., State University of New York at Buffalo—Professor

**Joseph Lanzafame**, BS, St. John Fisher College; Ph.D., University of Rochester—Lecturer

**Lea Michel**, BS, Colgate University; MS, Ph.D., University of Rochester—Assistant Professor

**Massoud J. Miri**, BS, MS, Ph.D., University of Hamburg—Associate Professor

**Suzanne F. O'Handley**, BS, Rutgers University; MS, Ph.D., University of Rochester—Associate Professor

**Christian G. Reinhardt**, BS, Lafayette College; Ph.D., University of Rochester—Professor

**K.S.V. Santhanam**, B.Sc., MA, Ph.D., Sri Venketaswara University (India)—Professor

**Thomas W. Smith**, BS, John Carroll University; Ph.D., University of Michigan—Professor

**Gerald A. Takacs**, BS, University of Alberta (Canada); Ph.D., University of Wisconsin—Professor

**Loraine Tan**, BS, Rensselaer Polytechnic Institute; Ph.D., University of Buffalo—Visiting Assistant Professor

**Laura Ellen Tubbs**, BA, Hood College; Ph.D., University of Rochester—Professor

## Department of Physics

**Michael Kotlarchyk**, BS, MS, Ph.D., Massachusetts Institute of Technology—Interim Department Head, Physics; Professor

**John D. Andersen**, BS, State University of New York at Buffalo; MA, Ph.D., University of Rochester—Professor

**David J. Axon**, B.Sc., Ph.D., University of Durham (U.K.)—Research Professor

**Linda S. Barton**, BS, Massachusetts Institute of Technology; MS, Ph.D., University of Illinois—Associate Professor

**Peter A. Cardegna**, BS, Loyola College; Ph.D., Clemson University—Professor

**Tracy A. Davis**, BA, BS, Wofford College; Ph.D., Clemson University—Associate Professor

**Alan B. Entenberg**, AB, Washington University; Ph.D., University of Rochester—Professor

**Scott V. Franklin**, BA, University of Chicago; Ph.D., University of Texas—Associate Professor

**Edwin Hach III**, BS, MS, St. Bonaventure University; Ph.D., University of Arkansas—Lecturer

**Thomas W. Herring**, BS, MS, Ph.D., University of Utah—Lecturer

**Ian M. Hodge**, BS, MS, University of Auckland (New Zealand); Ph.D., Purdue University—Lecturer

**Dawn Hollenbeck**, BS, University of California at Davis; MS, Ph.D., University of Texas at Dallas—Assistant Professor

**Seth M. Hubbard**, BS, Drexel University; MS, Case Western Reserve University; Ph.D., University of Michigan—Assistant Professor

**Ronald E. Jodoin**, BS, Worcester Polytechnic Institute; Ph.D., University of Rochester—Professor

**James R. Kern**, BS, Indiana University of Pennsylvania; MA, Indiana University; Ph.D., Clemson University—Professor

**Brian Koberlein**, BS, Southern Illinois University; MS, Ph.D., University of Connecticut—Lecturer

**Vern W. Lindberg**, B.Sc., University of Alberta; MS, Ph.D., Case Western Reserve University—Professor

**Manasse R. Mbonye**, BS, University of Pennsylvania; MA, Wayne State University; Ph.D., University of Connecticut—Assistant Professor

**David Merritt**, BS, University of Santa Clara; Ph.D., Princeton University—Professor

**David L. Morabito**, BS, MS, Rochester Institute of Technology; MA, University of Rochester; Ph.D., State University of New York at Buffalo—Lecturer

**Edward Nelson**, BA, Hamilton College; MA, Ph.D., University of Rochester—Lecturer

**Christopher O'Dea**, BS, Massachusetts Institute of Technology; Ph.D., University of Massachusetts—Professor

**Ryne Raffaele**, BS, MS, Southern Illinois University; Ph.D., University of Missouri at Rolla—Professor



**Michael W. Richmond**, BA, Princeton University; MA, Ph.D., University of California at Berkeley—Associate Professor

**Andrew Robinson**, BS, Ph.D., University of Manchester—Associate Professor

**Michael Jay Schillaci**, BS, State University College at Brockport; MA, Ph.D., University of Arkansas at Fayetteville—Lecturer

**Grover Swartzlander**, BS, Drexel University; MS, Purdue University; Ph.D., Johns Hopkins University—Associate Professor

**Robert B. Teese**, BS, North Carolina State University; MS, Ph.D., University of Texas—Professor

**George M. Thurston**, AB, Oberlin College; Ph.D., Massachusetts Institute of Technology—Professor

**Greg Trayling**, B.Sc., Simon Fraser University; M.Sc., University of Victoria; Ph.D., University of Windsor (Canada)—Lecturer

**Jerome Wagner**, BS, Case Institute of Technology; MS, Ph.D., University of Wisconsin—Professor

**Anne G. Young**, BA, Bryn Mawr College; MS, Ph.D., Cornell University—Professor

## Center for Materials Science and Engineering

**K.S.V. Santhanam**, B.Sc., MA, Ph.D., Sri Venkataswara University (India)—Director, Center for Materials Science and Engineering; Professor

**John Andersen**, BS, State University of New York at Buffalo; Ph.D., University of Rochester—Professor

**Jonathan S. Arney**, BS, Wake Forest University; Ph.D., University of North Carolina at Chapel Hill—Professor

**Linda Barton**, BS, Massachusetts Institute of Technology; MS, Ph.D., University of Illinois—Associate 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., India 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

**Seth M. Hubbard**, BS, Drexel University; MS, Case Western Reserve University; Ph.D., University of Michigan—Assistant Professor

**Joseph P. Hornak**, BS, Utica College of Syracuse University; MS, Purdue University; Ph.D., University of Notre Dame—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

**Ronald Jodoin**, BS, Worcester Polytechnic Institute; Ph.D., University of Rochester—Professor

**Michael Kotlarchyk**, BS, MS, Ph.D., Massachusetts Institute of Technology—Professor

**Santosh Kurinec**, BS, MS, Ph.D., University of Delhi (India)—Professor

**Andreas Langner**, BS, Ph.D., State University of New York at Buffalo—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

**Ryne P. Raffaele**, BS, MS, Southern Illinois University; Ph.D., University of Missouri at Rolla—Professor

**Sannasi Ramanan**, BS, Madras University; 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

**I. Renan Turkman**, MS, Ph.D., University of Paris—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, Chester F. Carlson Center for Imaging Science; Professor

**Jonathan S. Arney**, BS, Wake Forest University; Ph.D., University of North Carolina—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

**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—Assistant Research Professor

**Zoran Ninkov**, BS, University of Western Australia; M.Sc., Monash University (Australia); Ph.D., University of British Columbia—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—Associate Professor

**Harvey Rhody**, BS, University of Wisconsin; MSEE, University of Cincinnati; Ph.D., Syracuse University—Professor

**Mitchell Rosen**, BS, Tufts University; Ph.D., Rochester Institute of Technology—Assistant Research Professor

**Carl Salvaggio**, BS, MS, Rochester Institute of Technology; Ph.D., State University of New York College of Environmental Science and Forestry—Associate 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**, BSc, University of Stellenbosch; MS, Ph.D., Virginia Polytechnic Institute—Associate Professor

**Anthony Vodacek**, BS, University of Wisconsin; MS, Ph.D., Cornell University—Associate Professor

## National Technical Institute for the Deaf

### Office of the President, Vice President, and Dean

**T. Alan Hurwitz**, BS, Washington University; MS, St. Louis University; Ed.D., University of Rochester—President, NTID; Vice President and Dean, RIT; Professor

**Donald H. Beil**, BA, Washington University; MS, Washington State University—Executive Assistant to the President; Professor

### Academic Affairs

**Laurie C. Brewer**, BA, Ph.D., University of Rochester—Vice Dean and Interim Associate Vice President for Academic Affairs; Professor

**Stephen F. Aldersley**, BS, University of Surrey; MA, College of St. Rose; Ed.D., University of Rochester—In-

terim Associate Dean of Academic Administration; Professor

**Geoffrey S. Poor**, AAS, Seattle Central Community College; BA, Vassar College; MA, Nazareth College of Rochester—Coordinator, Office of Communication Assessment Services; Associate Professor

### American Sign Language and Interpreting Education

**Leisa Boling**, AAS, BFA, MS, Rochester Institute of Technology—Assistant Professor

**Sandra Bradley**, BS, Gallaudet University; MS, Rochester Institute of Technology—Lecturer

**Marguerite F. Carrillo**, BS, MS, Rochester Institute of Technology—Lecturer

**Colleen Evenstad**, BA, Gallaudet University; MS, Western Maryland College—Lecturer

**Karen L. Finch**, BS, Roberts Wesleyan College; MS, Canisius College—Lecturer

**Lynette S. Finton**, BA, Augustana College; MS, Rochester Institute of Technology—Professor

**Donna E. Gustina**, BS, Nazareth College of Rochester; MST, Rochester Institute of Technology—Associate Professor

**Barbara Ray Holcomb**, AAS, MS, Rochester Institute of Technology; BS, State University College at Brockport—Associate Professor

**Samuel K. Holcomb**, AAS, Rochester Institute of Technology—Lecturer

**Baldev Kaur Khalsa**, BA, M.Ed., Western Maryland College—Associate Professor

**Christine Monikowski**, BS, Shippensburg State College; MA, Gallaudet University; MA, Ph.D., University of New Mexico—Professor

**Cynthia Sanders**, AS, Rochester Institute of Technology; BS, MA, Syracuse University; DA, University at Albany—Program Director, American Sign Language; Assistant Professor

**Linda A. Siple**, AAS, Monroe Community College; BSW, MS, Rochester Institute of Technology; Ph.D., University at Buffalo—Program Director, American Sign Language-English Interpretation; Professor

**Kevin T. Williams**, BS, St. Louis Christian College; MS, Western Maryland College—Lecturer

### Arts and Imaging Studies

**Kenneth F. Hoffmann**, BS, Seton Hall University; M.Ind.Ed., Clemson University—Chairperson; Professor

**Frank C. Argento**, BFA, MFA, Rochester Institute of Technology—Associate Professor

**Omobowale Ayorinde**, BFA, Massachusetts College of Art; MFA, Rochester Institute of Technology—Assistant Professor

**Gilbert Beverly**, BA, National-Louis University; MS, Rochester Institute of Technology—Assistant Professor

**Julius J. Chiavaroli**, B.Arch., University of Notre Dame; MBA, Rochester Institute of Technology—Professor

**Cathleen W. Chou**, Certificate, New York University; BA, University of Rochester; MS, Rochester Institute of Technology—Assistant Professor

**David Cohn**, BS, BFA, Rochester Institute of Technology—Associate Professor

**Dawn Tower DuBois**, BS, MS, Rochester Institute of Technology—Assistant Professor

**Paula A. Grcevic**, BFA, MFA, Pratt Institute—Professor

**David E. Hazelwood**, BS, Rochester Institute of Technology—Assistant Professor

**Nancy J. Marrer**, BA, Franklin Pierce College; MS, Rochester Institute of Technology—Assistant Professor

**Andrea M. McNeill**, BS, MS, Rochester Institute of Technology—Assistant Professor

**Edward Mineck**, BA, University of Connecticut; MFA, Rochester Institute of Technology—Professor

**Jean-Guy Naud**, BS, MS, Rochester Institute of Technology—Professor

**Thomas J. Policano**, BS, University of Rochester; MFA, University at Buffalo—Associate Professor

**Thomas Raco**, BFA, MFA, Rochester Institute of Technology; Ed.D., University at Buffalo—Professor

**Sidonie M. Roepke**, BFA, MST, MS, Rochester Institute of Technology—Professor

**Kurt Stoskopf**, BFA, MFA, Rochester Institute of Technology—Assistant Professor

**Antonio Toscano**, Diploma, Atelier Frochet (France); BFA, Museum Art School; MFA, Rochester Institute of Technology—Associate Professor

**Katherine A. Voelkl**, BFA, MS, Rochester Institute of Technology—Associate Professor

**Michael J. Voelkl**, BFA, MST, Rochester Institute of Technology—Associate Professor

**Michael A. White**, BFA, MFA, Rochester Institute of Technology—Assistant Professor

### Business Studies

**Mary Louise Basile**, BA, LeMoyne College; MA, University at Albany; MBA, Rochester Institute of Technology—Chairperson; Professor

**Alvin C. Boyd**, AA, Delgado Community College; BS, Southern University and A&M College; BS, MS, Rochester Institute of Technology—Lecturer

**Jack R. Clarcq**, BS, State University College at Brockport; MA, West Virginia University; Ed.D., Syracuse University—Professor

**Allen M. Ford**, BA, Northwestern State University; MBA, Golden Gate University; MFA, MS, Rochester Institute of Technology—Assistant Professor

**Ann M. Hager**, BS, Nazareth College of Rochester; MA, University of Rochester—Assistant Professor

**Michael Kane**, BS, Rochester Institute of Technology; MS, Gallaudet University—Lecturer

**Adriana C. Kulakowski**, BS, Rochester Institute of Technology; MS, Nazareth College of Rochester—Lecturer

**Edward B. Lord**, AAS, Rochester Institute of Technology; BA, M.Ed., University of Massachusetts at Amherst—Assistant Professor

**Tracy DeLong Magin**, BS, MSED, State University College at Oswego—Lecturer

**Edward J. McGee**, AAS, Monroe Community College; B.Tech., MBA, Rochester Institute of Technology—Assistant Professor

**Mary Elizabeth Parker**, BS, University at Albany; M.Ed., University of Vermont—Associate Professor

**Mark J. Pfuntner**, BS, MBA, Rochester Institute of Technology—Assistant Professor

**Daniel J. Pike**, BS, MBA, Rochester Institute of Technology—Assistant Professor

**Kathleen S. Szczepanek**, AAS, AS, BS, MS, Rochester Institute of Technology—Lecturer

**Charlotte L. V. Thoms**, BS, Youngstown State University; MS, University of Rochester—Associate Professor

**William H. Wallace**, BS, United States Military Academy; MS, Binghamton University; CPA, New York—Associate Professor

## Communication Studies and Services

**Lawrence C. Scott**, BS, State University College at Geneseo; MS, Southern Illinois University at Carbondale—Chairperson; Associate Professor

**Sidney M. Barefoot**, AAS, State University of New York College of Environmental Science and Forestry; BS, State University College at Geneseo; MS, Pennsylvania State University—Professor

**Catherine C. Clark**, BA, Bradley University; MS, University of Louisville; AuD, Salus University—Assistant Professor

**John M. Conklin**, AAS, Orange County Community College; BS, State University College at Brockport; MS, State University College at Geneseo—Assistant Professor

**Linda G. Gottermeier**, BS, Nazareth College of Rochester; MA, State University College at Geneseo; AuD, Salus University—Associate Professor

**Marianne Gustafson**, BS, Northwestern University; MS, Syracuse University—Associate Professor

**Linda Palmer**, BA, University of Illinois; MA, Northern Illinois University—Assistant Professor

**Donald G. Sims**, BA, University of Colorado; MS, Ph.D., University of Pittsburgh—Associate Professor

**Karen B. Snell**, BA, University of Chicago; MA, University at Buffalo; Ph.D., University of Iowa—Associate Professor

**Brenda H. Whitehead**, BS, State University College at Geneseo; MA, Western Michigan University—Professor

**Valerie R. Yust**, BA, College of St. Francis; MS, Gallaudet University—Assistant Professor

## Cultural and Creative Studies

**Joseph H. Bochner**, BA, City University of New York at Queens College; MA, Ph.D., University of Wisconsin—Chairperson; Professor

**Gerald S. Argetsinger**, BA, Brigham Young University; MA, Ph.D., Bowling Green State University—Lecturer

**Karen L. Christie**, BS, M.Ed., Lewis and Clark College; Ph.D., University of Pittsburgh—Associate Professor

**Patricia A. Durr**, BA, LeMoyne College; MS, University of Rochester—Associate Professor

**Luane Davis Haggerty**, BA, City University of New York at Hunter College; MA, Goddard College; Ph.D., Antioch University—Visiting Assistant Professor

**Aaron Weir Kelstone**, BA, MA, Cleveland State University—Visiting Assistant Professor

**Dominique Lepoutre**, BA, University of Paris; BS, Western Connecticut State College; MS, Nazareth College of Rochester—Assistant Professor

**Bonnie Meath-Lang**, BA, Nazareth College of Rochester; MA, Western Illinois University; Ed.D., University of Rochester—Artistic Director; Professor

**Stephanie R. Polowe**, BA, Wayne State University; MA, State University College at Brockport; Ed.D., University of Rochester—Associate Professor

**J. Matt Searls**, BA, MA, Gallaudet University; Ph.D., The American University—Associate Professor

**Thomas F. Warfield**, BA, State University College at Purchase; MFA, University of Utah—Assistant Professor

## Educational Design Resources

**Marsha Young**, BA, Wayne State University; MS, Pennsylvania State University—Associate Professor

## Engineering Studies

**Dino J. Laury**, AAS, BS, MS, Rochester Institute of Technology—Interim Chairperson; Assistant Professor

**Scott Bellinger**, BS, University of Illinois; MS, Rochester Institute of Technology—Assistant Professor

**Thomas L. Callaghan**, BS, University of Massachusetts at Amherst; BS, MS, Rochester Institute of Technology—Assistant Professor

**Wendy Dannels**, AAS, BS, Ph.D., Rochester Institute of Technology—Lecturer

**James R. Fugate**, AAS, Monroe Community College; AAS, Rochester Institute of Technology; BA, University of Maryland—Assistant Professor

**Diane J. Heyden**, AAS, Erie Community College; BS, State University of New York Empire State College; MS, Rochester Institute of Technology—Assistant Professor

**Marcus Holmes**, AAS, BS, Rochester Institute of Technology—Lecturer

**Patricia Iglesias**, AAS, Universidad de Murcia (Spain); BS, Ph.D., Universidad Politécnica de Cartagena (Spain)—Lecturer

**William R. LaVigne**, B.Arch., University of Notre Dame; MS, Rochester Institute of Technology; AIA—Assistant Professor

**Benjamin R. Magee**, BS, Rochester Institute of Technology—Instructor

**Sidney L. McQuay**, AAS, Williamsport Community College; BS, MS, State University College at Oswego; Ph.D., University of Connecticut—Associate Professor

**Dominic J. Peroni**, AAS, Rochester Institute of Technology; BS, State University of New York Empire State College; MS, Rochester Institute of Technology—Assistant Professor

**Edward A. Schwenzer**, BA, MS, University of Rochester—Assistant Professor

**Ronald J. Till**, BS, State University College at Oswego; MS, State University College at Brockport—Associate Professor

## Information and Computing Studies

**Elissa M. Olsen**, AAS, BS, MS, Rochester Institute of Technology—Chairperson; Assistant Professor

**Karen Beiter**, BS, MS, Rochester Institute of Technology—Assistant Professor

**Tao Eng**, BS, MS, Rochester Institute of Technology—Lecturer

**Donna A. Lange**, BS, State University College at Brockport; MS, Rochester Institute of Technology—Associate Professor

**David E. Lawrence**, AAS, BET, University of Akron; MS, Rochester Institute of Technology—Associate Professor

**James R. Mallory**, AAS, Kent State University; BS, MS, Rochester Institute of Technology—Professor

**Myra Bennett Pelz**, BA, Rutgers University; MA, New York University; MS, Rochester Institute of Technology—Associate Professor

**Deborah Poe**, BS, Rochester Institute of Technology—Lecturer

**Tom Simpson**, BS, Rochester Institute of Technology; MS, Nazareth College of Rochester—Lecturer

**Joseph Stanislow**, AAS, BS, Rochester Institute of Technology; MS, Stevens Institute of Technology—Assistant Professor

**John V. Sweeney**, BS, MS, Michigan State University; MS, Rochester Institute of Technology—Assistant Professor

**Brian Trager**, BS, MS, Rochester Institute of Technology—Instructor

**Mark L. Wambach**, BA, St. John Fisher College; MS, Rochester Institute of Technology—Assistant Professor

**Werner Zorn**, AAS, BS, MS, Rochester Institute of Technology—Lecturer

## Liberal Studies

**Kathryn L. Schmitz**, BA, Duke University; MS, Rochester Institute of Technology; Ph.D., University at Buffalo—Interim Chairperson; Associate Professor

**Leslie Bowers**, BS, State University College at Brockport; MS, Nazareth College of Rochester—Lecturer

**Pamela R. Conley**, AAS, Rochester Institute of Technology; BA, Gallaudet University; MA, State University College at Brockport; MS, University of Rochester—Associate Professor

**Kathleen E. Crandall**, BA, MA, California State University at Fresno; Ph.D., Northwestern University—Associate Professor

**Jessica A. Cuculick**, BS, Rochester Institute of Technology; MSW, East Carolina University—Assistant Professor

**Jennifer Gravitz**, BS, MS, Rochester Institute of Technology; JD, Albany Law School—Assistant Professor

**Peter L. Haggerty**, BA, Wesleyan University; MA, Rutgers University—Associate Professor

**Sybil R. Ishman**, BA, University of North Carolina at Greensboro; MA, Ph.D., University of North Carolina at Chapel Hill—Associate Professor

**Susan K. Keenan**, BA, MA, University of Rochester; M.Ed., Ed.D., Columbia University—Associate Professor

**Pamela Kincheloe**, BA, Rollins College; MA, University of North Carolina at Chapel Hill; Ph.D., Southern Illinois University—Assistant Professor

**Kenneth Lerner**, BA, Beloit College; MS, University of Virginia—Visiting Instructor

**Larry J. LoMaglio**, BA, St. John Fisher College; MA, University of Rochester; Ed.M., University at Buffalo—Associate Professor

**Eugene Lylak**, BA, University at Buffalo; M.Ed., St Michael's College; Ed.D., University of Rochester—Professor

**John E. Panara**, AS, Monroe Community College; BS, MA, State University College at Brockport—Assistant Professor

**John-Allen Payne**, AA, San Diego City College; BA, California State University; MS, San Diego State University; Ph.D., University of Illinois—Associate Professor

**Gail A. Rothman-Marshall**, BA, University at Albany; MS, State University College at Brockport; Ph.D., University at Buffalo—Associate Professor

**Linda A. Rubel**, BA, Pennsylvania State University; MA, Ph.D., University of North Carolina at Chapel Hill—Professor

**K. Dean Santos**, BA, University of Minnesota; MSW, San Diego State University—Associate Professor

**Rose Marie Toscano**, BS, Portland State University; MA, University of Rochester—Professor

**Kathy Varone**, BS, State University College at Fredonia; MS, New York University—Visiting Assistant, Professor

**Marilyn Walker**, BA, City College of New York; MA, Ph.D., University of Illinois at Urbana-Champaign—Lecturer

**Jeanne Yamonaco**, BA, MS, Nazareth College of Rochester—Lecturer

## Research and Teacher Education

**John A. Albertini**, BA, Drew University; MS, Ph.D., Georgetown University—Chairperson; Professor

**Gerald C. Bateman**, BS, MS, State University College at Geneseo; Ed.D., University of Rochester—Professor

**Gerald P. Berent**, BS, University of Virginia; Ph.D., University of North Carolina at Chapel Hill—Professor

**Frank C. Caccamise**, BA, St. John Fisher College; MS, Gallaudet University; Ph.D., University of Washington—Professor

**Carol Lee De Filippo**, BA, Newark State College; MS, Purdue University; MS, Ph.D., Washington University—Professor

**Susan B. Foster**, BA, Northwestern University; BS, University of Maine; M.Ed., Bridgewater State College; Ph.D., Syracuse University—Professor

**Peter Hauser**, BA, Central Connecticut State University; MA, Ph.D., Gallaudet University—Associate Professor

**Ronald R. Kelly**, BS, M.Ed., Ph.D., University of Nebraska at Lincoln—Professor

**Christopher A.N. Kurz**, BS, Rochester Institute of Technology; MS, Ph.D., University of Kansas—Assistant Professor

**Harry G. Lang**, BS, Bethany College; MS, Rochester Institute of Technology; Ed.D., University of Rochester—Professor

**Gary L. Long**, BA, University of Akron; MA, Ph.D., Texas Christian University—Associate Professor

**Marc Marschark**, BA, Cornell University; MA, Ph.D., University of Western Ontario—Professor

**Ila Parasnis**, BA, MA, Nagpur University (India); MA, Ph.D., University of Rochester—Professor

**Vincent J. Samar**, BA, MA, Ph.D., University of Rochester—Associate Professor

**Sara Schley**, BA, Reed College; MA, Northeastern University; Ed.D., Harvard University—Associate Professor

**Michael S. Stinson**, BA, University of California at Berkeley; MA, Ph.D., University of Michigan—Professor

**Robert L. Whitehead**, BS, MS, Brigham Young University; Ph.D., University of Oklahoma, Health Sciences Center—Professor

## Science and Mathematics

**Vincent A. Daniele**, BS, MS, State University College at Cortland; Ph.D., Syracuse University—Chairperson; Professor

**Mitchell Bacot**, BS, MS, Rochester Institute of Technology—Lecturer

**Patricia Billies**, BA, Nazareth College of Rochester; MS, Rochester Institute of Technology—Lecturer

**Joan A. Carr**, BA, State University College at Cortland; MS, University of New Hampshire—Associate Professor

**Stacey M. Davis**, BA, Colgate University; MS, Rochester Institute of Technology—Lecturer

**Carla J. Deibel**, BS, Central Michigan University; MS, Rochester Institute of Technology—Visiting Assistant Professor



**Angela L. Foreman**, BA, University of California at Davis; MBA, University of Phoenix; Ph.D., University of California at Davis—Assistant Professor

**Warren R. Goldmann**, BS, Stanford University; MS, Rochester Institute of Technology—Lecturer

**Jane K. Jackson**, BS, Stony Brook University; MS, University of Rochester—Assistant Professor

**Peter Lalley**, BS, Siena College; MS, Catholic University of America; Ph.D., University at Buffalo—Professor

**Matthew A. Lynn**, BS, The Ohio State University; MS, Indiana University; Ph.D., University of Arizona—Assistant Professor

**Judith E. MacDonald**, BA, State University College at Geneseo; MS, University of Rochester—Assistant Professor

**Keith Mousley**, BS, Rochester Institute of Technology; MA, Gallaudet University—Associate Professor

**Todd E. Pagano**, BA, State University College at Oswego; MS, Tufts University—Associate Professor

**Larry K. Quinsland**, BA, University of Wisconsin at Madison; MA, MS, University of Wisconsin at Milwaukee; Ph.D., Walden University—Professor

**Victoria J. Robinson**, BS, MS, University of Illinois at Urbana—Associate Professor

**Annemarie D. Ross**, BS, MS, Rochester Institute of Technology—Instructor

**Miriam E. Santana-Valadez**, BS, Normal Superior Nueva Galicias; BS, ITESO University (Mexico); MS, St. John Fisher College—Lecturer

**Matthew J. Stefano**, BS, MS, Rochester Institute of Technology—Lecturer

**David C. Templeton**, BA, Wittenberg University; MA, Northwestern University—Associate Professor

**Sharron M. Webster**, BS, MS, Rochester Institute of Technology—Assistant Professor

**Patricia S. Wink**, B.Tech., MS, Rochester Institute of Technology—Lecturer

**Delelegne Woldmedhin**, BS, Haile Selassie University (Ethiopia); MS, Addis Ababa University (Ethiopia); DA, Idaho State University—Assistant Professor

## Student and Academic Services

**Eleanor D. Rosenfield**, BS, The Ohio State University; MS, Indiana University; Ed.D., University of Rochester—Associate Dean for Student and Academic Services; Associate Professor

## NTID Center for Intercollegiate Athletics and Recreation Support

**Janice L. Strine**, AAS, State University College at Cobleskill; BS, State University of New York Empire State College; MS, State University College at Brockport—Assistant Professor

## Counseling and Academic Advising Services

**Robb E. Adams**, BA, Hope College; MA, Eastern Michigan University; MS, State University College at Brockport; Ph.D., University at Buffalo—Chairperson; Associate Professor

**Delbert D. Dagle**, AAS, Finger Lakes Community College; BS, M.Ed., CAS, State University College at Brockport—Associate Professor

**Kathy L. Davis**, BS, MS, State University College at Brockport; Certificate, Rochester Institute of Technology—Assistant Professor

**Margaret A. Hoblit**, BA, San Jose State University; MS, California State University at Sacramento—Assistant Professor

**Patricia L. Lago-Avery**, BS, Central Michigan University; MS, University of Arizona—Assistant Professor

**Jane E. Mullins**, BA, MA, Gallaudet University—Associate Professor

**Mark J. Rosica**, BS, State University College at Oswego; MS, Syracuse University; CAS, Gallaudet University—Associate Professor

**Solange C. Skyer**, BS, Rhode Island College; MA, Gallaudet University—Associate Professor

**Carl A. Spoto**, BA, University of Rochester; MS, University at Albany—Associate Professor

**Lee H. Twyman**, BA, Indiana University; MA, Northern Illinois University—Associate Professor

**Anne VanGinkel**, BA, University of California at Santa Barbara; MS, Western Oregon State University—Assistant Professor

## First-Year Experiences

**Linda M. Bryant**, BS, Nazareth College of Rochester; MS, Gallaudet University—Associate Professor

## Learning Consortium/Learning Center

**Jeffrey E. Porter**, B.Ed., M.Ed., University of Virginia; Ph.D., Washington University—Chairperson; Associate Professor

## College Operations

**Albert Smith**, BS, Wake Forest University; MS, Rochester Institute of Technology—Assistant Vice President for College Operations

## College Advancement

**Gerard J. Buckley**, BS, Rochester Institute of Technology; MSW, University of Missouri; Ed.D., University of Kansas—Assistant Vice President for College Advancement; Associate Professor

## Northeast Regional Center

**Dianne K. Brooks**, BS, Howard University; MS, Gallaudet University—Director; Associate Dean for College Outreach

## Postsecondary Education Network International

**James J. DeCaro**, BS, MS, University at Buffalo; Ph.D., Syracuse University—Director; Professor

**E. William Clymer**, AAS, BS, MBA, Rochester Institute of Technology; M.Ed., Syracuse University—Associate Professor

**Nora B. Shannon**, BA, Nazareth College of Rochester; MS, Canisius College—Associate Professor

## The National Advisory Group

**Scot Atkins**, Director of Organizational Development and Human Resources, Interpretek

**Andrew N. Brenneman**, Senior Government Account Executive, Sprint Business Solutions

**Richard Burkhauser**, Ph.D., Professor and Chair, Department of Policy Analysis and Management, Cornell University

**Claudia Gordon**, Senior Policy Advisor, Department of Homeland Security

**K. Todd Houston**, Deputy Director of NCHAM, Utah State University

**Catherine Hunt**, Corporate Sustainability Director and Leader, Technology Partnerships, Rohm and Haas Company

**Lauren Lercher**, Research Teaching Specialist, Department of Neuroscience and Cell Biology, University of Medicine and Dentistry of New Jersey

**Jon Levy**, Principal, Orange County Department of Education, Regional Deaf and Hard of Hearing Program

**Timothy McCarty**, President, Quest: Arts for Everyone

**Angel Ramos**, Superintendent, Sequoia School for the Deaf and Hard of Hearing

**Susan Salvador**, Vice President, Student Services, Monroe Community College

**Thomas Samuels**, Media Specialist (retired), LaGuardia Community College

**Marilyn Jean Smith**, Executive Director, Abused Deaf Women's Advocacy Services, Seattle



**Sara Weiner**, Project Coordinator, Women with Disabilities Health Equity Coalition

## U.S. Government Representatives

**The Honorable John “Randy” Kuhl Jr.**, Member, U.S. Congress

**The Honorable Charles E. Schumer**, Member, U.S. Senate, New York State

**The Honorable Louise M. Slaughter**, Member, U.S. House of Representatives, New York State

## Honorary Members

**W. Frank Blount**

**The Honorable Hugh L. Carey**

**Nancy R. Horton**

**Jane Ratcliffe Pulver**

## Faculty Emeriti

**Sam Abrams**, Professor Emeritus, College of Liberal Arts

**Jerry Adduci**, Professor Emeritus, College of Science

**Louis Alexander**, Professor Emeritus, Physical Education

**Peter Anderson**, Professor Emeritus, B. Thomas Golisano College of Computing and Information Sciences

**Louis Andolino**, Professor Emeritus, College of Liberal Arts

**Charles Arnold Jr.**, Professor Emeritus, Photographic Arts and Sciences

**Bekir Arpag**, Professor Emeritus, Printing Management and Sciences

**David Baker**, Professor Emeritus, College of Applied Science and Technology

**Rodger W. Baker**, Professor Emeritus, College of Applied Science and Technology

**Thomas Barker**, Professor Emeritus, Kate Gleason College of Engineering, Center for Quality and Applied Statistics

**Mary Anne Begland**, Professor Emerita, College of Imaging Arts and Sciences

**Lawrence Belle**, Professor Emeritus, College of Continuing Education

**Art Berman**, Professor Emeritus, College of Liberal Arts

**William Birkett**, Professor Emeritus, College of Imaging Arts and Sciences

**Kener Bond**, Professor Emeritus, College of Imaging Arts and Sciences

**Philip Bornarth**, Professor Emeritus, College of Imaging Arts and Sciences

**Edward Brabant**, Professor Emeritus, Printing

**Evelyn Brandon**, Professor Emerita, College of Liberal Arts

**George Brown**, Professor Emeritus, Kate Gleason College of Engineering

**Joseph E. Brown**, Professor Emeritus, Printing Management and Sciences

**Richard G. Budynas**, Professor Emeritus, Kate Gleason College of Engineering

**Donald Bujnowski**, Professor Emeritus, College of Imaging Arts and Sciences

**Edward Cain**, Professor Emeritus, College of Science

**James I. Campbell**, Professor Emeritus, Liberal Arts

**Walter A. Campbell**, Professor Emeritus, Printing Management and Sciences

**Robert Clark**, Professor and Dean Emeritus, College of Science

**Douglas Cleminshaw**, Associate Professor Emeritus, College of Imaging Arts and Sciences

**Douglas A. Coffey**, Professor Emeritus, College of Liberal Arts

**Sarah Collins**, Professor Emerita, College of Liberal Arts

**John Compton**, Professor Emeritus, College of Imaging Arts and Sciences

**Norman R. Coombs**, Professor Emeritus, College of Liberal Arts

**Lawrence A. Coon**, Professor Emeritus, College of Applied Science and Technology

**Virginia Costenbader**, Professor Emerita, College of Liberal Arts

**W. Frederick Craig**, Associate Professor Emeritus, Printing Management and Sciences

**Elizabeth Croft**, Associate Professor Emerita, College of Liberal Arts

**Neil Croom**, Professor Emeritus, Photographic Arts and Sciences

**Ira Current**, Professor Emeritus, Printing Management and Sciences

**Margaret D’Ambruso**, Professor Emerita, College of Science

**William J. Daniels**, Professor and Dean Emeritus, College of Liberal Arts

**Joseph DeLorenzo**, Professor Emeritus, Kate Gleason College of Engineering

**William J. DeRitter**, Professor Emeritus, College of Liberal Arts

**Robert R. Davila**, Vice President Emeritus, National Technical Institute for the Deaf

**Charles DeRoller**, Associate Professor Emeritus, College of Applied Science and Technology

**David Dickinson**, Professor Emeritus, College of Imaging Arts and Sciences

**Constantino Dumangane**, Associate Professor Emeritus, College of Liberal Arts

**Robert H. Easton**, Associate Professor Emeritus, College of Applied Science and Technology

**Judy Egelston-Dodd**, Professor Emerita, National Technical Institute for the Deaf

**F. Kingsley Elder**, Professor Emeritus, College of Science

**Robert A. Ellson**, Professor Emeritus, Kate Gleason College of Engineering

**Louis Eltscher**, Professor Emeritus, College of Liberal Arts

**Lothar Engelmann**, Professor Emeritus, Photographic Arts and Sciences

**Joseph Fitzpatrick**, Professor Emeritus, College of Liberal Arts

**James D. Forman**, Professor Emeritus, College of Applied Science and Technology

**Hugh Fox**, Professor Emeritus, College of Imaging Arts and Science

**Clifton Frazier**, Professor Emeritus, College of Imaging Arts and Sciences

**Jon Freckleton**, Associate Professor Emeritus, Kate Gleason College of Engineering

**Earl W. Fuller**, Professor Emeritus, Physical Education

**Lester Fuller**, Professor Emeritus, College of Science

**Louis Gennaro**, Professor Emeritus, College of Applied Science and Technology

**Thomas Gennett**, BA, State University College at Potsdam; Ph.D., University of Vermont—Professor Emeritus

**Dale F. Gibson**, Associate Professor Emeritus, E. Philip Saunders College of Business

**Robert Gilman**, Professor Emeritus, College of Science

**Peter Giopulos**, Professor Emeritus, College of Imaging Arts and Sciences

**James Glasenapp**, Professor Emeritus, College of Science

**Dane Gordon**, Professor Emeritus, College of Liberal Arts

**Robert Hacker**, Professor Emeritus, College of Imaging Arts and Sciences

**Paul A. Haefner**, Professor Emeritus, College of Science

**Charles W. Haines**, Professor Emeritus, Kate Gleason College of Engineering and College of Science

**Frances H. Hamblin**, Professor Emerita, College of Liberal Arts

**William J. Hayles**, Professor Emeritus, College of Science

**Robert Hefner**, Professor Emeritus, Kate Gleason College of Engineering

**Edwin O. Hennick**, Associate Professor Emeritus, College of Liberal Arts

**Richard Hetnarski**, Professor Emeritus, Kate Gleason College of Engineering

**Charles Hewett**, Professor Emeritus, College of Science

**Warren L. Hickman**, Professor Emeritus, College of Liberal Arts

**Ronald Hilton**, Professor Emeritus, College of Continuing Education

**Barbara J. Hodik**, Professor Emerita, College of Imaging Arts and Sciences

**Edwin Hoefler**, Professor Emeritus, College of Science

**Eugene G. Hoff**, Assistant Professor Emeritus, E. Philip Saunders College of Business

**Jack Hollingsworth**, Professor Emeritus, College of Science

**Walter G. Horne**, Professor Emeritus, Printing Management and Sciences

**John Hromi**, Professor Emeritus, Kate Gleason College of Engineering

**Charles W. Hunt**, Associate Professor Emeritus, Printing

**Morton Isaacs**, Professor Emeritus, College of Liberal Arts

**Joanne M. Jacobs**, Associate Professor Emerita, College of Liberal Arts

**Donald Johnson**, Professor Emeritus, National Technical Institute for the Deaf

**Balwant Karlekar**, Professor Emeritus, Kate Gleason College of Engineering

**Robert Kayser**, Associate Professor Emeritus, College of Imaging Arts and Sciences

**Weston Kemp**, Professor Emeritus, College of Imaging Arts and Sciences

**Harold Kentner**, Professor Emeritus, Continuing Education

**Richard Kenyon**, Dean Emeritus, Kate Gleason College of Engineering

**Robert Kerr**, Professor Emeritus, Art and Design

**William Keyser**, Professor Emeritus, College of Imaging Arts and Sciences

**Andrew Kitchen**, Professor Emeritus, B. Thomas Golisano College of Computing and Information Sciences

**M. Joseph Klingensmith**, Professor Emeritus, College of Science

**Art Kovacs**, Professor Emeritus, College of Science

**Earl Krakower**, Professor Emeritus, College of Science

**Russ Kraus**, Professor Emeritus, College of Imaging Arts and Sciences

**Richard Lane**, Professor Emeritus, Kate Gleason College of Engineering

**Marion L'Amoreaux**, Associate Professor Emerita, Reading and Study Clinic

**Alexander S. Lawson**, Professor Emeritus, Printing

**Howard LeVant**, Professor Emeritus, College of Imaging Arts and Sciences

**Richard D. Lunt**, Professor Emeritus, College of Liberal Arts

**Douglas Lyttle**, Professor Emeritus, Photographic Arts and Sciences

**Swmainathan Madhu**, Professor Emeritus, Kate Gleason College of Engineering

**Lakshmi Mani**, Professor Emerita, College of Liberal Arts

**Douglas M. Marshall**, Associate Professor Emeritus, Mechanical Engineering

**Edward Maruggi**, Professor Emeritus, National Technical Institute for the Deaf

**Craig McArt**, Professor Emeritus, College of Imaging Arts and Sciences

**Walter McCanna**, Professor and Dean Emeritus, E. Philip Saunders College of Business

**Robert E. McGrath Jr.**, Professor Emeritus, College of Applied Science and Technology

**Paul Miller**, President Emeritus

**Salvatore Mondello**, Professor Emeritus, College of Liberal Arts

**Robert Morgan**, Professor Emeritus, College of Imaging Arts and Sciences

**John Neenan**, Professor Emeritus, College of Science

**Chris Nilsen**, Professor Emeritus, Kate Gleason College of Engineering

**Joe Noga**, Professor Emeritus, College of Imaging Arts and Sciences

**Russell A. Norton**, Professor Emeritus, College of Continuing Education

**Elizabeth O'Brien**, Professor Emerita, National Technical Institute for the Deaf

**Thomas O'Brien**, Professor Emeritus, College of Liberal Arts

**David L. Olsson**, Professor Emeritus, College of Applied Science and Technology

**John Paliouras**, Professor and Dean Emeritus, College of Science

**James Palmer**, Professor Emeritus, Kate Gleason College of Engineering

**Robert Panara**, Professor Emeritus, National Technical Institute for the Deaf

**David Perlman**, Professor Emeritus, Kate Gleason College of Engineering

**Paul Petersen**, Dean Emeritus, Kate Gleason College of Engineering

**Daniel Petrizzi**, Professor Emeritus, Eisenhower College

**Mark Piterman**, Professor Emeritus, College of Applied Science and Technology

**Archie Provan**, Emeritus Professor, College of Imaging Arts and Sciences

**Harry Rab**, Associate Professor Emeritus, Printing Management and Sciences

**Varadaraja V. Raman**, Professor Emeritus, College of Science

**Margery Reading-Brown**, Associate Professor Emerita, College of Liberal Arts

**Werner Rebsamen**, Emeritus Professor, College of Imaging Arts and Sciences

**Kenneth Reek**, Professor Emeritus, B. Thomas Golisano College of Computing and Information Sciences

**Margaret Reek**, Professor Emerita, B. Thomas Golisano College of Computing and Information Sciences

**Martin A. Rennalls**, Professor Emeritus, Graphic Arts and Photography

**James Rice**, Professor Emeritus, College of Imaging Arts and Sciences

**Albert D. Rickmers**, Professor Emeritus, College of Graphic Arts and Photography

**David Robertson**, Professor Emeritus, Photographic Arts and Sciences

**Donald C. Robinson**, Professor, Kate Gleason College of Engineering

**Frank Romano**, Professor Emeritus, College of Imaging Arts and Sciences

**M. Richard Rose**, President Emeritus

**Richard Rosett**, Dean Emeritus, E. Philip Saunders College of Business

**James Runyon**, Professor Emeritus, College of Science

**Marvin Sachs**, Associate Professor Emeritus, National Technical Institute for the Deaf

**Pasquale T. Saeva**, Professor Emeritus, College of Science

**Edward Salem**, Professor Emeritus, Kate Gleason College of Engineering

**Nan Schaller**, Professor Emerita, B. Thomas Golisano College of Computing and Information Sciences

**Edward Schilling**, Professor Emeritus, Kate Gleason College of Engineering

**Emery Schneider**, Professor Emeritus, College of Imaging Arts and Sciences

**Gerhard Schumann**, Professor Emeritus, Photographic Arts and Sciences

**Anthony Sears**, Professor Emeritus, Printing

**Franz Seischab**, Professor Emeritus, College of Science

**Earl H. Sexton**, Professor Emeritus, College of Science

**John Shaw**, Professor Emeritus, College of Science

**Jasper Shealy**, Professor Emeritus, Kate Gleason College of Engineering

**Douglas Sigler**, Professor Emeritus, College of Imaging Arts and Sciences

**Julius Silver**, Professor Emeritus, Printing Management and Sciences

**Donald Smith**, Associate Professor Emeritus, Photographic Arts and Sciences

**Marshall Smith**, Professor Emeritus, College of Liberal Arts

**Caroline Snyder**, Professor Emerita, College of Liberal Arts

**Robert Snyder**, Professor Emeritus, Kate Gleason College of Engineering

**Arnold Sorvari**, Professor Emeritus, Photographic Arts and Sciences

**Miles Southworth**, Professor Emeritus, College of Imaging Arts and Sciences

**G. Hollister Spencer**, Professor Emeritus, Business Administration

**Egon Stark**, Professor Emeritus, College of Science

**Leslie Stroebel**, Professor Emeritus, School of Photographic Arts and Sciences

**E. Ross Stuckless**, Professor Emeritus, Research, National Technical Institute for the Deaf

**Mary Sullivan**, Professor and Dean Emerita, College of Liberal Arts

**U. T. Summers**, Associate Professor Emerita, College of Liberal Arts

**Hector Sutherland**, Professor Emeritus, Printing

**Robert W.W. Taylor**, Associate Professor Emeritus, National Technical Institute for the Deaf

**Elaine Thiesmeyer**, Professor Emerita, College of Liberal Arts

**James Thomas**, Professor Emeritus, College of Imaging Arts and Sciences

**Toby Thompson**, Professor Emeritus, College of Imaging Arts and Sciences

**Jack Tishkoff**, Professor Emeritus, College of Science

**Robert S. Tompkins**, Assistant Professor Emeritus, Printing Management and Sciences

**John Trauger**, Professor Emeritus, Photographic Arts and Sciences

**Arden L. Travis**, Professor Emeritus, E. Philip Saunders College of Business

**James Troisi**, Associate Professor Emeritus, College of Liberal Arts

**Thomas Upson**, Professor Emeritus, College of Science

**Vladimir Vukanovic**, Professor Emeritus, College of Science

**Helen Wadsworth**, Assistant Professor Emerita, College of Liberal Arts

**James R. Walsh**, Associate Professor Emeritus, Printing Management and Sciences

**Nancy Wanek**, Professor Emerita, College of Science

**Charles Warren**, Professor Emeritus, College of Liberal Arts

**Joseph Watson**, Professor Emeritus, College of Imaging Arts and Sciences

**Charles J. Weigand**, Associate Professor Emeritus, Printing Management and Sciences

**Houghton Wetherald**, Professor Emeritus, College of Liberal Arts

**Dorothy Widmer**, Professor Emerita, Student Affairs

**Theodore Wilcox**, Professor Emeritus, College of Science

**Norm Williams**, Professor Emeritus, College of Imaging Arts and Sciences

**Thomas Williams**, Professor Emeritus, E. Philip Saunders College of Business

**Edwin M. Wilson**, Professor Emeritus, Photographic Arts and Sciences

**Eugene O. Wilson**, Associate Professor Emeritus, E. Philip Saunders College of Business

**Fred Wilson**, Professor Emeritus, College of Liberal Arts

**Stanley H. Witmeyer**, Professor Emeritus, Fine and Applied Arts

**Richard Zakia**, Professor Emeritus, Photographic Arts and Sciences

**Hans Zandvoort**, Professor Emeritus, College of Liberal Arts

# Directory

**Admission, Graduate**  
(585) 475-2229

[www.rit.edu/emcs/ptgrad/grad/](http://www.rit.edu/emcs/ptgrad/grad/)

**Admission, NTID**  
(585) 475-6700 (V/TTY)

[www.ntid.rit.edu/](http://www.ntid.rit.edu/)

**Admission, Part-time**  
(585) 475-2229

[www.rit.edu/emcs/ptgrad/grad/](http://www.rit.edu/emcs/ptgrad/grad/)

**Admission, Undergraduate**  
(585) 475-6631

[www.admissions.rit.edu](http://www.admissions.rit.edu)

**Alumni Relations**  
(585) 475-ALUM  
(585) 475-2764 (V/TTY)

[www.rit.edu/alumni.html](http://www.rit.edu/alumni.html)

**Athletics**  
(585) 475-2614 (V/TTY)

[www.ritathletics.com/](http://www.ritathletics.com/)

**Campus Events**  
(585) 475-5252  
(585) 475-5454 (V/TTY)

<https://events.rit.edu/>

**Closing and Cancellation Hotline**  
(585) 475-7075

(585) 475-7076 (V/TTY)

**Computing/ITS Help Desk**  
(585) 475-4357

(585) 475-2810 (V/TTY)

[www.rit.edu/its/help/](http://www.rit.edu/its/help/)

**Cooperative Education and Career Services**

(585) 475-2301

[www.rit.edu/emcs/oce/](http://www.rit.edu/emcs/oce/)

**Development**  
(585) 475-5500  
(585) 475-5018 (V/TTY)

[www.rit.edu/development/giving/](http://www.rit.edu/development/giving/)

**Financial Aid and Scholarships**  
(585) 475-2186  
(585) 475-6909 (V/TTY)

[www.rit.edu/financialaid](http://www.rit.edu/financialaid)

**Government and Community Relations**  
(585) 475-4966

[www.rit.edu/gcr/gov/](http://www.rit.edu/gcr/gov/)

**Housing Operations**  
(585) 475-2572  
(585) 475-2113 (V/TTY)

<http://finweb.rit.edu/housing/>

**Human Resources**  
(585) 475-2424

<http://finweb.rit.edu/humanresources/>

**Information (General)**  
(585) 475-2411

**International Student Services**  
(585) 475-6943

[www.rit.edu/studentaffairs/iss/](http://www.rit.edu/studentaffairs/iss/)

**Libraries**  
(585) 475-2562

<http://library.rit.edu/>

**NTID Center on Employment**  
(585) 475-6219 (V/TTY)

[www.ntid.rit.edu/nce/](http://www.ntid.rit.edu/nce/)

**Online Learning**  
(800) CALL-RIT (225-5748)

<http://online.rit.edu/>

**Parent Relations**  
(585) 475-6424

**Public Safety**  
(585) 475-2853

<http://finweb.rit.edu/publicsafety/>

**Registrar**  
(585) 475-2821 (V/TTY)

[www.rit.edu/academicaffairs/registrar/](http://www.rit.edu/academicaffairs/registrar/)

**Student Affairs**  
(585) 475-2265

[www.rit.edu/studentaffairs/](http://www.rit.edu/studentaffairs/)

**Student Financial Services**  
(585) 475-6186  
(585) 475-2080 (V/TTY)

<http://finweb.rit.edu/sfs/>

**University News Services**  
(585) 475-5064

[www.rit.edu/news/](http://www.rit.edu/news/)



<b>A</b>		Applied Networking and System Administration	Biological Sciences . . . . .
Academic Advising . . . . .	209	BS Degree . . . . .	114
Academic Assessment Program. . . . .	212	Minor . . . . .	Biology
Academic Enrichment. . . . .	205	Applied Imaging Systems	BS Degree . . . . .
Academic Policies and Procedures . . . . .	209	Minor . . . . .	BS/MS Degree Option . . . . .
Academic Probation and Suspension	210	Applied Informatics	Biomedical Photographic Communications
Academic Programs of Study. . . . .	7	Minor . . . . .	BS Degree . . . . .
Academic Progress Requirements . . . . .	247	Applied Optical Technology	BS Degree . . . . .
Academic Support Center . . . . .	212	AAS Degree . . . . .	Biomedical Sciences
Accelerated Dual Degree Options . . . . .	206	AOS Degree . . . . .	BS Degree . . . . .
Accounting		Applied Science and Technology, College of . . . . .	113
BS Degree . . . . .	43	Applied Statistics	Biotechnology
Minor . . . . .	175	BS Degree . . . . .	Bioinformatics Option . . . . .
Accounting Technology		BS/MS Degree Option . . . . .	BS Degree . . . . .
AAS Degree. . . . .	148	Arabic Language	BS/MS Degree Option . . . . .
Accreditation (see individual programs)		Minor. . . . .	Black Awareness Coordinating Committee . . . . .
Actuarial Studies . . . . .	121	Arabic Language/Culture	Bookstore (see Campus Stores)
Administration . . . . .	258	Concentration . . . . .	Buckley Amendment . . . . .
Administrative Support Technology		Minor. . . . .	209
AAS Degree . . . . .	148	Archaeology	Business Administration
Admission		Concentration. . . . .	AAS Degree . . . . .
Guidelines, Freshman. . . . .	236, 237	Archaeological Science	Minor . . . . .
Guidelines, NTID . . . . .	135, 236	Minor. . . . .	Business and Management
Guidelines, Transfer . . . . .	236, 239	ARMY Reserve Officer Training Corps (AFROTC) . . . . .	AAS Degree . . . . .
Advanced Placement . . . . .	211	Art and Computer Design	AS Degree . . . . .
Advertising Photography		AAS Degree . . . . .	Business Studies
BFA Degree . . . . .	89	AOS Degree . . . . .	AS Degree . . . . .
Advertising and Public Relations		Art and Imaging Studies	Business Technology
BS Degree . . . . .	94	AAS Degree . . . . .	AOS Degree . . . . .
Minor . . . . .	176	AOS Degree . . . . .	
Aerospace Engineering Option . . . . .	73	Art History	<b>C</b>
Air Force Reserve Officer Training Corps (AFROTC) . . . . .	39	Concentration . . . . .	Campus
Alcohol and Drug Policy . . . . .	232	Minor . . . . .	Social Events . . . . .
Ambulance. . . . .	221	Art, School of . . . . .	Stores . . . . .
American Artistic Experience		ASL-English Interpretation	Visits . . . . .
Concentration . . . . .	163	BS Degree . . . . .	Career Exploration Studies . . . . .
American Crafts, School for . . . . .	82	AAS Degree . . . . .	131
American Politics		Astronomy	Center for Multidisciplinary Studies . . . . .
Concentration . . . . .	163	Minor . . . . .	21
Minor . . . . .	176	Audiology Services . . . . .	Ceramics and Ceramic Sculpture
American Sign Language		Auditing Courses . . . . .	BFA Degree . . . . .
Concentration . . . . .	166	Automation Technologies	BS Degree . . . . .
Application Requirements . . . . .	236	AAS Degree . . . . .	BS Degree . . . . .
Applied Arts and Science Degrees . . . . .	33	AOS Degree . . . . .	BS/MS Degree Options . . . . .
Applied Communication		Automotive Engineering Option . . . . .	124, 125
Minor . . . . .	176		Child Care (see Margaret's House)
Applied Computer Technology		<b>B</b>	Chinese Language
AS Degree . . . . .	139	Barnes & Noble @ RIT . . . . .	Minor . . . . .
AAS Degree . . . . .	139	Biochemistry	Chinese Language/Culture
AOS Degree . . . . .	140	BS Degree . . . . .	Concentration . . . . .
Applied Imaging Systems		BS/MS Degree Option . . . . .	Minor . . . . .
Minor . . . . .	176	Bioengineering Option . . . . .	Civil Engineering Technology
Applied Mathematics		Bioinformatics	BS Degree . . . . .
BS Degree . . . . .	121	BS Degree . . . . .	BS Degree . . . . .
Applied Mechanical Technology		BS/MS Degree Option . . . . .	Class Attendance . . . . .
AAS Degree . . . . .	140		210

College of			
Applied Science and Technology . . .	11		
Business . . . . .	41		
Computing and Information Sciences . . . . .	47		
Engineering . . . . .	59		
Imaging Arts and Sciences . . . . .	75		
Liberal Arts . . . . .	93		
National Technical Institute for the Deaf . . . . .	130		
Science . . . . .	110		
Commission for Promoting Pluralism	231		
Communication			
Concentration . . . . .	164		
Minor . . . . .	179		
Communication Studies and Services	219		
Computational Mathematics			
BS Degree . . . . .	122		
BS/MS Degree Option . . . . .	123		
Computer-aided Drafting Technology			
AAS Degree . . . . .	150		
AOS Degree . . . . .	150		
Computer Engineering			
BS Degree . . . . .	63		
Minor . . . . .	179		
Computer Engineering Technology			
BS Degree . . . . .	16		
BS/MS Degree Option . . . . .	16		
Computer Graphics			
Certificate . . . . .	35		
Computer Integrated Machining Technology			
AOS Degree . . . . .	151		
Computer Science			
BS Degree . . . . .	47		
Minor . . . . .	180		
Computer Use, Code of Conduct . . .	231		
Computing and Information Sciences, B. Thomas Golisano College of . . .	47		
Computing Services (see Information and Technology Services)			
Conduct Policies . . . . .	231		
Confidentiality of Student Records . .	209		
Conflict Management Services. . . . .	234		
Construction Management			
Minor. . . . .	180		
Cooperative Education and Career Services . . . . .	205, 213		
Cooperative Education Requirement (See also individual programs)			
Costs and Tuition			
RIT. . . . .	242		
NTID . . . . .	135		
Counseling Center . . . . .	213		
Counseling Services . . . . .	213		
Course Descriptions . . . . .	160		
Course Registration. . . . .	210		
Creative Writing			
Minor . . . . .	180		
Credit by Exam . . . . .	211		
Criminal Justice			
BS Degree . . . . .	95		
Concentration . . . . .	164		
Minor. . . . .	180		
Cultural Resource Studies			
BS Degree . . . . .	98		
Curriculum Requirements			
Liberal Arts . . . . .	161		
Mathematics and Science . . . . .	162		
<b>D</b>			
Database Design and Development			
Minor . . . . .	181		
Day Care (see Margaret's House)			
Deaf Community . . . . .	256		
Deaf Studies			
Certificate . . . . .	155		
Concentration. . . . .	165		
Minor. . . . .	181		
Deaf Studies			
Certificate . . . . .	156		
Deans . . . . .	258		
Dean's List Eligibility. . . . .	210		
Diagnostic Medical Sonography			
BS Degree . . . . .	119		
Certificate . . . . .	119		
Digital Business			
Minor. . . . .	181		
Digital Cinema			
BS Degree . . . . .	86		
Digital Imaging and Publishing Technology			
AAS Degree. . . . .	152		
AOS Degree. . . . .	152		
Directory . . . . .	282		
Disability Services . . . . .	214		
Disaster and Emergency Management			
Certificate . . . . .	31		
Distinguished Professorships . . . . .	258		
Double Majors. . . . .	207		
Drug and Alcohol Policy . . . . .	232		
<b>E</b>			
Early Admission. . . . .	237		
E-Business			
Certificate . . . . .	35		
Economics			
BS Degree . . . . .	99		
Concentration. . . . .	165		
Minor . . . . .	181		
Educational Technology Center . . .	215		
Electrical Engineering			
BS Degree . . . . .	64		
BS/MS Degrees . . . . .	68		
Minor . . . . .	182		
Electrical Engineering Technology			
BS Degree . . . . .	14		
Electrical/Mechanical Engineering Technology			
BS Degree . . . . .	19		
Electronic Billing Procedures . . . . .	243		
Emergency Notification. . . . .	230		
Energy and Environment Option . . .	73		
Engineering Exploration Program . . .	61		
Engineering, Kate Gleason College of .	59		
Engineering Management			
Minor . . . . .	182		
Engineering Technology . . . . .	11		
English Language Center . . . . .	214		
Entrepreneurship			
Minor . . . . .	183		
Environmental Chemistry Option . .	124		
Environmental Health and Safety . . .	230		
Environmental Management Science			
Certificate . . . . .	29		
Environmental Management and Technology			
BS Degree . . . . .	27		
Environmental Modeling			
Minor . . . . .	183		
Environmental Science			
BS Degree . . . . .	116		
BS/MS Degree. . . . .	117		
Minor. . . . .	183		
Environmental Studies			
Concentration. . . . .	165		
Minor. . . . .	184		
Environmental Technology and Environmental Health and Safety Management			
BS/MS Degree. . . . .	28		
Exercise Science			
Certificate . . . . .	120		
Minor . . . . .	184		
Experiential Learning . . . . .	205		
Extended Studies Diplomas in			
Art, Design . . . . .	84		
<b>F</b>			
Facilities . . . . .	234		
Faculty . . . . .	260		
Fee Schedule. . . . .	242		
Film/Video/Animation			
BFA Degree . . . . .	86		
Finance			
BS Degree . . . . .	43		
Minor. . . . .	184		
Financial Aid and Scholarships .	215, 245		
Financial Aid Programs . . . . .	242		
Fine and Applied Arts			
Diploma . . . . .	84		
Fine Art Photography			
BFA Degree . . . . .	90		
Fine Arts Studio			
BFA Degree . . . . .	78		
First-Year Experiences Program, NTID . . . . .	133		

First-Year Enrichment .....	215	Higher Education Opportunity Program (HEOP) .....	26	International Baccalaureate .....	211
Food Management		Historical Perspectives on Science and Technology		International Business	
Concentration .....	25	Minor .....	188	BS Degree .....	44
Food Marketing and Distribution		History		Minor .....	190
Concentration .....	25	Concentration .....	168	International Logistics and Transportation Certificate .....	36
Food Service Venues .....	235	Minor .....	188	International Relations	
Foreign Language		Honor Code .....	231	Concentration .....	169
Minors .....	184	Honors Program .....	206	Minor .....	190
Foreign Language/Culture		Hospitality and Service Management		International Student Services .....	216
Concentrations .....	166	AS Degree (NTID) .....	154	International Studies	
Minors .....	186	BS Degree .....	24	BS Degree .....	100
French Language		Hotel and Resort Management		Italian Language	
Minor .....	185	Concentration .....	26	Minor .....	185
French Language/Culture		Housing/Recreational Facilities .	223, 234	Italian Language/Culture	
Concentration .....	166	Housing Connection .....	223	Concentration .....	167
Freshman Admission .....	236	Housing Operations .....	223	Minor .....	187
Furniture Design, Woodworking and .	84	Human Resource Administration		<b>J</b>	
<b>G</b>		Diploma .....	34	Japanese Language	
Game Design		Human Resource Development		Minor .....	185
Minor .....	188	Certificate .....	35	Japanese Language/Culture	
Game Design and Development		Human Resource Management		Concentration .....	167
BS Degree .....	52	Concentration .....	26	Minor .....	187
Minor .....	188	Minor .....	189	Jewelry Design, Metals and .....	83
General Education Requirements		<b>I</b>		Journalism	
Liberal Arts .....	161	Illustration		BS Degree .....	101
Mathematics and Science .....	162	BFA Degree .....	78	Minor .....	191
NTID .....	133	Imaging Arts and Sciences, College of.	75	<b>L</b>	
General Management		Imaging and Photographic Technology		Laboratory Science Technology	
Diploma .....	34	BS Degree .....	89	AAS Degree .....	155
General Science Exploration .....	112	Imaging Science		AOS Degree .....	155
German Language		BS Degree .....	129	Latino/Latina/Latin American Studies	
Minor .....	185	Center for .....	129	Concentration .....	169
German Language/Culture		Minor .....	189	Leadership Institute and Community	
Concentration .....	167	Immunization Requirements .	221, 237	Service Center .....	229
Minor .....	186	Independant Study .....	207	Learning Consortium (NTID) .....	218
Glass and Glass Sculpture		Industrial Design		Learning Support Services .....	212
BFA Degree .....	83	BFA Degree .....	81	Legal Studies	
Global Studies		Industrial Environmental Management		Minor .....	191
Concentration .....	168	Certificate .....	29	Liberal Arts Advising .....	93, 161
Global Union .....	223	Minor .....	190	Liberal Arts, College of .....	93
Gordon Field House and Activities		Industrial and Systems Engineering		Liberal Arts Concentrations .....	163
Center .....	235	BS Degree .....	71	Liberal Arts Exploration Program .	109
Grading System .....	209	BS/MS Degree .....	71	Liberal Arts General Education	
Graduate Enrollment Services .....	215	Industrial Engineering		Requirements .....	161
Graduation Requirements .....	161	Minor .....	190	Libraries .....	217
Graphic Communiation		Information and Technology Services	216	Literary and Cultural Studies	
Certificate .....	35	Information Security and Forensics		Concentration .....	169
Graphic Design		BS Degree .....	55	Minor .....	191
BFA Degree .....	80	Information Technology		<b>M</b>	
Greek Council .....	227	AAS Degree .....	50	Management Development Program	
<b>H</b>		BS Degree .....	49	Certificate .....	34
Health Center .....	220	Intercollegiate Athletics .....	223	Management	
Health Records .....	221	Intercollegiate Athletics and Recreation,		BS Degree .....	44
Health Systems Management		Center for .....	223	Diploma .....	34
Certificate .....	26	Interior Design		Minor .....	192
Concentration .....	25	BFA Degree .....	81		

Management Information Systems			
BS Degree	44		
Minor	192		
Manufacturing Engineering Technology			
BS Degree	20		
Manufacturing and Mechanical Engineering Technology/Packaging Science			
BS/MS Degree	19		
Manufacturing Technology			
Certificates	36		
Margaret's House (Child Care)	217		
Marketing			
BS Degree	44		
Diploma	34		
Minor	192		
Mass Media Communication			
Minor	192		
Material Cultural Studies			
Concentration	170		
Mathematics			
Minor	193		
Mathematics and Science General			
Education Curriculum	162		
Mechanical Engineering			
BS Degree	72		
BS/MS Degree	73		
Minor	193		
Mechanical Engineering Technology			
BS Degree	21		
Mechanical Technology			
AS Degree	22		
Medical Illustration			
BFA Degree	78		
Medical Informatics			
BS Degree	50		
BS/MS Degree	51		
Medical Sciences	118		
Mental Health Services	214		
Metals and Jewelry Design			
BFA Degree	83		
Microelectronic Engineering			
BS Degree	67		
BS/MS Degree	69		
Microelectronic and Nanofabrication			
Minor	194		
Military Science, Department of	38		
Military Studies and Leadership			
Minor	40, 194		
Minors	175		
Minority Relations in the US			
Concentration	170		
Mobil Escort Service	229		
Music			
Concentration	170		
Minor	194		
Music and Technology			
Minor	195		
<b>N</b>			
Named Scholarships	252		
National Technical Institute for the Deaf	130		
Native American Science and Technology Concentration	171		
Networking and System Administration			
Minor	195		
New Media Design and Imaging			
BFA Degree	81		
New Media Interactive Development			
BS Degree	53		
New Media Marketing			
BS Degree	44		
New Media Publishing			
BS Degree	92		
BS/MBA Degree	92		
North Star Center for Academic Success and Cultural Affairs	218		
Notification and Appeal, Academic	258		
Nutrition Management			
BS Degree	27		
<b>O</b>			
Off-Campus and Apartment Student Association	227		
Officers	258		
Online Learning	207		
Optical Sciences			
Minor	195		
Organizational Change and Leadership Certificate	36		
Orientation, New Student	218		
<b>P</b>			
Packaging Science			
BS Degree	23		
Minor	196		
Park Point	225		
Parking and Transportation	230		
Part-time Enrollment Services	220		
Part-time Extended Studies in Art and Design	84		
Payment Plans	246		
Payment Procedures	242		
Peace Studies			
Concentration	171		
Performing Arts			
Certificate	158		
Performing Arts Programs (NTID)	228		
Philosophy			
BS Degree	103		
Concentration	171		
Minor	186		
Photojournalism			
BFA Degree	90		
Physician Assistant			
BS Degree	118		
Physics			
BS Degree	128		
Minor	197		
Policies and Procedures, Academic	209		
Political Science			
Minor	197		
Polymer Chemistry			
BS Degree	127		
BS/MS Degree	128		
Portfolio Guidelines	76		
Pre-baccalaureate Studies	157		
Pre-medical Studies	111		
Print Media			
Minor	198		
Probation, Academic	210		
Professional and Technical Communication			
BS Degree	104		
Psychology			
BS Degree	106		
Concentration	171		
Minor	198		
Public Relations			
Certificates	37		
Public Policy			
BS Degree	107		
BS/MS Degree	107		
Concentration	172		
Minor	199		
Public Safety	229		
<b>Q</b>			
Quality Management			
Certificate	37		
<b>R</b>			
RAC Course Work Agreement	208		
Recreation and Intramurals	235		
Refund Policies	243		
Registration	210		
Religious Life, Center for	229		
Religious Studies			
Concentration	172		
Reporter Magazine	226		
Research, Undergraduate	205		
Reserve Officer Training Corps (ROTC)			
Air Force	39		
Army	38		
Residence Halls Association	223, 227		
Residence Life, Center for	223		
Resources for Deaf/Hard-of-Hearing Students	218		
Retention	211		
RIT Community	223		



RITreat .....	234	Statistics		Tuition Assistance Program (TAP) ..	246
Rochester Community .....	255	Minor .....	201	<b>U</b>	
Russian Language		Structural Design		Ultrasound (see Diagnostic Medical	
Minor .....	185	Certificate .....	14	Sonography)	
Russian Language/Culture		Minor .....	201	Undeclared Options	
Concentration.....	167	Student Alumni Union .....	235	Applied Arts and Science .....	6
Minor .....	187	Student Clubs .....	225	Engineering Exploration .....	6
<b>S</b>		Student Conduct and Mediation,		General Science Exploration .....	6
Safety and Health Technology		Office of .....	230	Liberal Arts Exploration .....	6
Certificate .....	31	Student Conduct Policies .....	230	Undeclared Art .....	6
Safety and Security Report .....	230	Student Congress (NTID) .....	228	Undeclared Business.....	6
Safety Technology		Student Employment .....	246	Undeclared Crafts.....	6
BS Degree .....	29	Student Financial Services .....	221	Undeclared Design .....	6
BS/MS Degree .....	30	Student Government .....	225, 227	Undeclared Engineering	
Scholarships .....	245	Student Health Center .....	220	Technology.....	6, 12
School of		Student Housing .....	223	Undergraduate Admission .....	236
American Crafts .....	82	Student Loans .....	246	Undergraduate Research.....	205
Art .....	77	Student Misconduct .....	234	University Costs.....	242
Design .....	79	Student Music Association .....	228	University Studies .....	5
Film and Animation.....	85	Student Professional Associations .....	226	Urban and Community Studies	
Hospitality and Service		Student Records.....	209	BS Degree .....	108
Management.....	24	Student Retention .....	211	BS/MS Degree .....	109
Life Sciences .....	113	Student Services.....	212	Minor .....	202
Mathematical Sciences.....	120	Sickness Insurance Plan .....	243	<b>V</b>	
Photographic Arts and Sciences .....	86	Study Abroad Program .....	205	Vehicle Registration .....	230
Print Media .....	91	Summer Vestibule Program .....	220	Veteran Enrollment Services .....	222
Science and Technology Studies		Suspension, Academic.....	210	Visits to Campus .....	237
Concentration .....	172	Sustainable Product Development		Visual Media	
Science, College of.....	110	Minor .....	201	BFA Degree .....	91
Science, Technology, and Policy		<b>T</b>		Vocational Rehabilitation.....	243
Minor .....	199	Technical Communication		<b>W</b>	
Science, Technology, and Society		Certificate .....	37	Web Design and Development	
Minor .....	199	Telecommunications		Minor.....	203
Science Writing		Minor.....	202	Web Development	
Minor .....	200	Telecommunications Engineering		Minor.....	203
Service Management		Technology		Wellness Education Requirement .....	162
Minor .....	200	BS Degree .....	17	Withdrawal from Courses .....	210
Sexual Assault Information Hotline ..	230	BS/MS Degree .....	18	WITR Radio.....	227
Sexual Harassment/Misconduct		Theatre Arts		Women and Gender Studies	
Policies.....	231	Concentration .....	173	Concentration .....	174
Small Business Management		Minor .....	202	Minor .....	203
Certificate .....	37	3D Digital Graphics		Women's Center.....	229
Concentration.....	37	BFA Degree .....	80	Woodworking and Furniture Design	
Sociology and Anthropology		Transcripts .....	209	AOS Degree .....	84
Concentration.....	173	Transfer Admission .....	236	BFA Degree .....	84
Minor .....	200	Transfer Credit.....	211	Writing Studies	
Software Engineering		Travel and Tourism Management		Concentration.....	174
BS Degree .....	56	Concentration.....	26	Minor.....	203
Minor .....	201	TRiO Support Services .....	221		
Speech and Language Services.....	219	Trustees.....	257		
Spanish Language		Tuition			
Minor .....	186	RIT.....	242		
Spanish Language/Culture		NTID .....	135		
Concentration .....	167				
Minor.....	187				



## RIT Campus

- |                              |  |  |
|------------------------------|--|--|
| 1 George Eastman Building    | 14 Hugh L. Carey Building                              | 25 Grace Watson Hall   |
| 2 Frank Ritter Ice Arena     | 15 Campus Connections Bookstore                        | 55 Hettie L. Shumway Commons                                     |
| 3 George H. Clark Gymnasium  | 16 Kilian J. & Caroline F. Schmitt Interfaith Center   | 60 Lyndon Baines Johnson Building                                |
| 4 Student Alumni Union       | 17 Center for Microelectronic and Computer Engineering | 70 College of Applied Science and Technology, B. Thomas Golisano |
| 5 Wallace Library            | 18 Color Science Building                              | 74 Laboratory for Applied Computing                              |
| 6 Liberal Arts Building      | 23 Hale-Andrews Student Life Center                    | 75 Center for Bioscience Education and Technology                |
| 7A James E. Booth Building   | 23A August Center                                      |  |
| 7B Frank E. Gannett Building | 24 Gordon Field House and Activity Center              |  |
| 8 Gosnell Building           |  |  |
| 9 James E. Gleason Building  |  |  |
| 10 Lewis P. Ross Building    |  |  |
| 11 Information Center        |  |  |
| 12 Max Lowenthal Building    |  |  |

## RIT Student Residences

- |   |                                    |  |
|---|------------------------------------|--|
| 76 Chester F. Carlson Center for Imaging Science            | 20 Riverknoll Apartments           | 35 Kate Gleason Hall                               |
| 77 Bausch & Lomb Center                                     | 90 Perkins Green Apartments        | 39 Helen Fish Hall A, B                            |
| 78 Louise Slaughter Building                                | 97 Colony Manor Apartments         | 41 Helen Fish Hall C, D, E, F                      |
| 82 Engineering Technology Building                          | 27 Francis Baker Hall              | 43 Nathaniel Rochester Hall                        |
| 86 Building 86  | 29 Francis Baker Hall              | 47 Sol Heumann Hall                                |
| 87 University Services Center/Center for Student Innovation | 28 Fraternity and Sorority Housing | 49 Carleton Gibson Hall                            |
| 89 Crossroads Building                                      | 30 Fraternity and Sorority Housing | 50A Mark Ellingson Hall                            |
| 99 Facilities Management                                    | 32 Fraternity and Sorority Housing | 50B Peter Peterson Hall                            |
|   | 31 Eugene Colby Hall A, B          | 50C Alexander Graham Bell Hall, University Commons |
|   | 33 Eugene Colby Hall C, D, E       |  |
|   | 37 Eugene Colby Hall F, G          |  |