Rochester Institute of Technology

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2008

2008-2009 Undergraduate Bulletin

Rochester Institute of Technology

Recommended Citation

Rochester Institute of Technology
2008–09 University Calendar

Fall Quarter (20081)

April 22 – September 1
Fall registration *

September 1
Day, evening, and online classes begin

September 6
Saturday classes begin

September 8
Last day to add/drop courses

September 9
First day to withdraw online via SIS;
receive a "W" grade

October 24
Last day to withdraw online via SIS;
receive a "W" grade

November 7
Last day classes

November 10, 11, 12, 13, 14
Final exams—day classes

November 14
Last evening classes

November 15
Last Saturday and online classes

November 16–30
Fall/winter break

November 27, 28
University closed

Winter Quarter (20082)

October 14 – December 1, 2009
Winter registration *

December 1
Day, evening and online classes begin

December 6
Saturday classes begin

December 8
Last day to add/drop courses

December 9
First day to withdraw online via SIS;
receive a "W" grade

December 19
Last day and evening classes before break

December 20
Last Saturday classes before break

December 21 – January 2, 2009
Holiday break

December 25 – January 1, 2009
University closed

January 5
Day and evening classes resume

January 10
Saturday classes resume

February 6
Last day to withdraw online via SIS;
receive a "W" grade

February 20
Last day classes

February 23, 24, 25, 26, 27
Final exams—day classes

February 27
Last evening classes

February 28
Last Saturday and online classes

March 2, 3, 4, 5, 6
Winter/spring break

Spring Quarter (20083)

January 27 – March 9, 2009
Spring registration *

March 9
Day, evening, and online classes begin

March 14
Saturday classes begin

March 16
Last day to add/drop courses

March 17
First day to withdraw online via SIS;
receive a "W" grade

May 1
Last day to withdraw online via SIS;
receive a "W" grade

May 15
Last day classes

May 16
Last Saturday classes

May 18, 19, 20, 21, 22
Final exams—day classes

May 22
Last evening and online classes

May 22
Academic Convocation
Commencement Ceremonies

May 23
Commencement Ceremonies

May 25
Memorial Day – University closed

May 26, 27, 28, 29
Spring/summer break

Summer Quarter (20084)

April 14 – June 1, 2009
Summer registration *

June 1
Day, evening, and online classes begin

June 6
Saturday classes begin

June 8
Last day to add/drop courses

June 9
First day to withdraw online via SIS;
receive a "W" grade

July 3, 4
Independence Day—University closed

July 24
Last date to withdraw online via SIS;
receive a "W" grade

August 7
Last day classes

August 10, 11, 12, 13
Final exams—day classes

August 14
Last evening classes

August 15
Last Saturday and online classes

** Refer to the 2008-09 Registration Guide
for specific registration dates and times,
or the Student Information System (SIS)
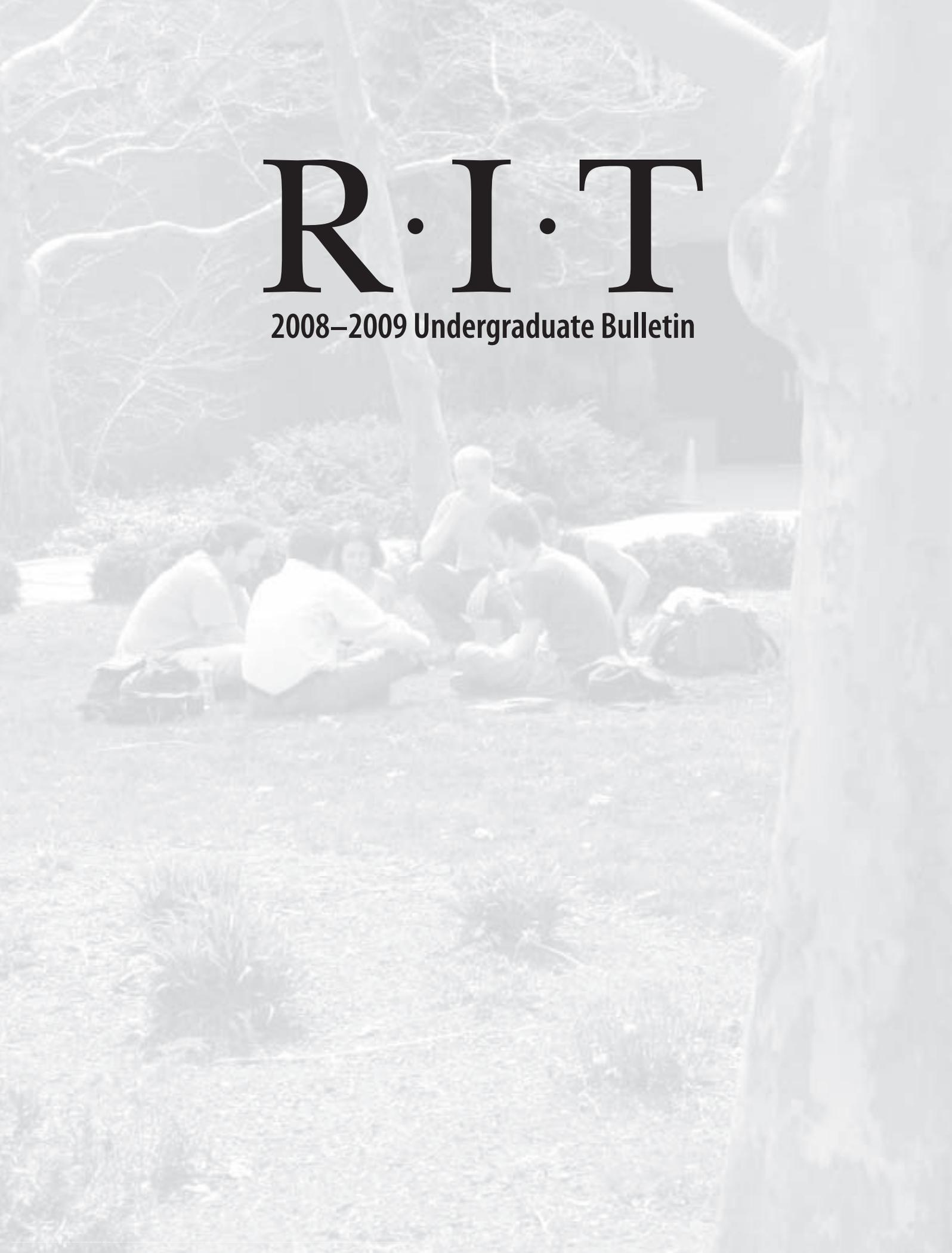at http://infocenter.rit.edu.*

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2008–2009 Undergraduate Bulletin

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 2008–09 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 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.

Rochester Institute of Technology

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An Introduction to Rochester Institute of Technology

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

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

Few universities provide RIT's variety of career-oriented studies. Our 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 95 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 11,400 full-time undergraduate students, 1,600 part-time undergraduate students, and 2,625 graduate students attend RIT. More than 100,000 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 1,100 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 eight majors leading to the bachelor of science degree: accounting, consumer finance, finance, international business, management, management information systems, marketing, and new media marketing. With an emphasis on innovation and 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 work 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: applied networking and systems administration, computer science, game design and development, information technology, information security and forensics, medical informatics, new media interactive development, and software engineering. The college also houses the Center for Advancing the Study of Cyberinfrastructure. 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 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 computer, electrical, industrial, mechanical, and microelectronic engineering. The college also offers a minor in chemical engineering systems analysis and expects to launch a BS degree in chemical engineering in the fall of 2009 (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, professional and technical communication, psychology, public policy, and urban and community studies. A one-year RIT exploration program 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 600 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 associ-

ate degree programs leading directly to employment or transfer 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.

RIT Research Centers, Laboratories, and Organizations

- Analog Devices Integrated Microsystems Laboratory
- Astrophysics Science and Technology
- Biomedical Imaging/MRI
- Biomedical Imaging/Ultrasound
- Center for Advanced Device Research
- Center for Advancing the Study of Cyberinfrastructure
- Center for Applied and Computational Math
- Center for Biosciences Education and Technology
- Center for Computational Relativity and Gravitation
- Center for Education Research Partnerships
- Center for Electronic Manufacturing and Assembly
- Center for Excellence in Lean Enterprise
- Center for Innovation and Entrepreneurship
- Center for Integrated Manufacturing Studies
- Center for Nanolithography Research
- Center for Quality and Applied Statistics
- Center on Access Technology
- Chester F. Carlson Center for Imaging Science
- Digital Imaging and Remote Sensing Laboratory
- Image Permanence Institute
- Imaging Products Laboratory
- International Center for Hearing and Speech Research
- IT Collaboratory
- Laboratory for Advanced Communication Technology
- Laboratory for Computer–Human Interaction
- Laboratory for Digital Image Restoration
- Laboratory for Environmental Computing and Decision Making
- Laboratory for Graphical Simulation, Visualization, and Virtual Worlds
- Laboratory for Imaging Algorithms and Systems
- Laboratory for Intelligent Systems
- Laboratory for Printing Materials and Process
- Laboratory for Social Computing
- Laboratory for Wireless Networks and Security
- Manufacturing Technologies Program
- Munsell Color Science Laboratory
- NanoPower Research Laboratory
- National Center for Remanufacturing and Resource Recovery
- Print Research and Imaging Systems Modeling Laboratory
- Printing Applications Laboratory
- Printing Industry Education Program
- Research and Teacher Education Center
- RF/Analog Mixed Signal Laboratory
- RIT Venture Creations Incubator
- Semiconductor and Microsystems Fabrication Laboratory
- Sloan Printing Industry Center
- Sustainable Systems Research Center
- Systems Modernization and Sustainment Center
- Thermal Analysis and Microfluidics Laboratory
- Visual Perception Laboratory

Academic Programs of Study

Undergraduate Programs	College	Certificate	Diploma	AOS	AS	AAS	BFA	BS	Evening Option	Online Option	Page
					Degree and HEGIS*						
Accounting Technology	NTID		5002			5002					XX
Administrative Support Technology	NTID		5005			5005					
Advertising and Public Relations	COLA							0604			
Applied Arts and Science	CAST		5699			5699		4999	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‡	NTID			5212		5212					
Art and Computer Design†	NTID			5012		5012					
Arts and Imaging Studies	NTID			5012		5012					
ASL-English Interpretation	NTID					5506		1199			
Automation Technologies	NTID			5399		5399					
Biochemistry#	COS							0414			
Bioinformatics#	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				
Chemistry#	COS				5619			1905	Y		

Undergraduate Programs	College	Certificate	Diploma	AOS	AS	AAS	BFA	BS	Evening Option	Online Option	Page
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 Machine Technology	NTID		5312	5312							
Computer Science#	GCCIS							0701	Y		
Criminal Justice	COLA							2105			
Cultural Resource Studies	COLA							1099			
Deaf Studies‡	NTID	5506							Y		
Deaf Studies/American Sign Language	NTID	5506									
Design:											
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†	NTID		5007	5007		5007					
Disaster and Emergency Management	CAST	5508								Y	
E-Business	CAST	5001							Y	Y	
Echocardiography	COS	5217									
Economics	COLA							2204			
Engineering:											
Computer Engineering#	COE							0999			
Electrical Engineering#	COE							0909			
Industrial Engineering#	COE							0913			
Mechanical Engineering#	COE							0910			
Mechanical Engineering Science Technology and Public Policy	COE/COLA							0910			
Microelectronic Engineering#	COE							0999			
Engineering Science	COE				5609				Y		
Engineering Technology:										Y	
Civil Engineering Technology	CAST							0925			
Computer Engineering Technology	CAST							0925	Y		

Undergraduate Programs	College	Certificate	Diploma	AOS	AS	AAS	BFA	BS	Evening Option	Online Option	Page
Electrical Engineering Technology	CAST							0925	Y		
Electrical Technology	CAST					5310			Y		
Electrical/Mechanical Engineering Technology#	CAST							0925	Y	Y	
Manufacturing Engineering Technology (CIM)#	CAST							0925	Y		
Mechanical Engineering Technology	CAST							0925	Y		
Mechanical Technology	CAST	5301				5315			Y		
Telecommunications Engineering Technology#	CAST							0925		Y	
Environmental Management and Technology	CAST							0420	Y		
Environmental Science#	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+	CIAS							0699			
Graphic Media	CIAS							0699			
Health Systems Administration	CAST	5299							Y	Y	
Hospitality and Service Management	CAST					5010		0508			
Hospitality and Service Management	NTID				5011						
Human Resource Administration	CAST					5004			Y		
Illustration	CIAS					5610	1002				
Imaging Science	COS							1999.20			
Imaging and Photographic Technology	CIAS					5007	1011				
Information Security and Forensics	GCCIS							0799			
Information Technology	GCCIS					5101		0699	Y		
International Studies	COLA							2210			
Laboratory Science Technology	NTID			5407		5407					
Management Development	CAST	5004	5004						Y		
Mathematics:											
Applied Mathematics#	COS				5617			1703			
Computational Mathematics#	COS							1703			
Medical Illustration	CIAS					5011		0510			
Medical Informatics#	GCCIS							1217			
Metals and Jewelry Design	CIAS					5012	1009				

Undergraduate Programs	College	Certificate	Diploma	AOS	AS	AAS	BFA	BS	Evening Option	Online Option	Page
New Media:											
New Media–Design and Imaging	CIAS						0605				
New Media–Publishing	CIAS							0605			
New Media Interactive Development	GCCIS							0699			
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									
Photographic Illustration, Professional:	CIAS					5007	1011				
Physician Assistant	COS							1299.10			
Physics	COS				5619			1902			
Polymer Chemistry#	COS							1907			
Psychology	COLA							2001			
Public Policy#	COLA							2102			
Quality, Basic	CAST	5004								Y	
Quality Implementation	CAST	5004								Y	
Safety Technology	CAST	5312						0420		Y	
Small Business Management	CAST	5004							Y		
Software Engineering	GCCIS							0999			
Statistics, Applied#	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 2008-09.
‡ This program has been suspended. No new students will be admitted in 2008-09

College of Applied Science and Technology

H. Fred Walker, Dean
www.rit.edu/cast

The College of Applied Science and Technology provides programs that stress technology in many 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.

The college is committed to preparing graduates to be innovative, technologically advanced, and entrepreneurial. It offers a number of dynamic programs. There are seven engineering technology programs—civil, computer, electrical, electrical/mechanical, manufacturing, mechanical, and telecommunications—as well as programs in hospitality and service management, nutrition management, packaging science, environmental management and technology, safety technology, health systems administration, and applied arts and science. Degree programs are offered at the associate, baccalaureate, and master's degree levels, and a wide array of diplomas and certificates are 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 new College of Applied Science and Technology building officially opened in April 2008. This latest addition to the RIT campus is our first green building. It was designed to meet the standards of the Leadership in Energy and Environmental Design (LEED) rating system. Established by the U.S. Green Building Council, LEED is the most widely accepted rating system for evaluating sustainable, high-performance buildings of the U.S. Green Building Council. The building design implementes a wide range of sustainable strategies including careful management of the site during development; the preferred use of renewable or recyclable materials rather than virgin materials; improved design for energy and water efficiency, design, and construction procedures to improve indoor air quality; and other measures that are categorized as "Innovation in Design." This is a category for exemplary performance and innovative design ideas that go beyond the defined LEED rating system—a category that RIT and the college wholly embraced.

The experiential nature of each program requires excellent facilities and equipment. We take pride in being RIT's first green building eligible for LEED certification, and the building is a living laboratory available for demonstrations and experimentation in green technologies. The $10.6 million building houses the William G. McGowan Student Commons, the American Packaging Corporation Center for Packaging Innovation, the department of civil engineering technology/environmental management and safety administration, advising and faculty offices, and laboratories. It also includes the William G. McGowan Center for Telecommunications, Innovation, and Collaborative Research; the REDCOM Telecommunications Systems Laboratory; OSHA Training Center; and the department of electrical, computer, and telecommunications engineering technology administration, advising, and faculty offices and laboratories.

An adjacent building houses the remainder of the department of manufacturing and mechanical engineering technology/packaging science administrative; advising; faculty offices; newly renovated student project area; and mechanical systems, materials, and product innovation laboratories. Additional laboratories are located in the Center for Integrated Manufacturing Studies (CIMS), where the educational areas include 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 that is part of our School of Hospitality and Service Management, 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. The faculty is 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.

Program planning

Each student is considered individually when his or her program is planned. The variety of transfer programs from two-year colleges necessitates an almost tailor-made pattern of courses and knowledge. Every effort is made to ensure that associate degrees retain the integrity they deserve and to avoid repetition of previously studied material.

Engineering Technology

RIT is a leader in the development of baccalaureate programs in engineering technology. The program's bachelor of science degree meets the growing needs of business and industry for engineering technologists.

Degree programs

The engineering technology department offers bachelor of science (BS) degrees in the following areas:
- 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 of 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 build their program and tailor it to fit previous knowledge and work experience.

Upper division: Part-time study in all engineering technology upper-division programs is available during the day. Part-time study in the evenings is available only in these programs: computer, electrical, manufacturing, electrical/mechanical, mechanical, and telecommunications engineering technology. Many of these programs also offer courses in the evening for part-time students. These programs allow flexibility for students with full-time jobs to obtain a BS degree on a part-time basis.

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. Please request a Part-time Undergraduate Studies Guide, Online Studies Guide, or visit the Part-time and Graduate Enrollment Services website at www.rit.edu/emcs/ptgrad/.

Accreditation

The following baccalaureate degree programs are accredited by the Technology Accreditation Commission of ABET, 1 Market Place, Suite 1050, Baltimore, Maryland 21202, telephone (410) 347-7700: civil engineering technology, computer engineering technology, electrical engineering technology, electrical/mechanical engineering technology, manufacturing 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 below.

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 become familiar with the direct application of techniques, skills, and the latest developments in their fields. 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 RIT 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

Students interested in engineering technology or packaging science but undecided about selecting a specific program of study should consider the undeclared engineering technology option. This option allows students to spend up to a 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 electrical and mechanical disciplines. They also participate in Engineering Technology Seminar (0606-101) in which they explore 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 the year 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.
Fall Quarter	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
Winter Quarter	*Choose from one of the following programs:* Electrical Engineering Technology, Mechanical Engineering Technology, Electrical/Mechanical Engineering Technology, Computer Engineering Technology, Telecommunications Engineering Technology, Civil Engineering Technology, Environmental Management, Safety Technology, Packaging Science	
	Liberal Arts*	4
	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
Spring Quarter	Calculus for Engineering Technology II 1016-232 or Math sequence	4
	Liberal Arts*	4
	Two courses within option selected (with adviser approval)	8
	Total Quarter Credit Hours	*52*

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

Civil Engineering Technology

Abi Aghayere, Acting Chair
Scott B. Wolcott, Undergraduate Coordinator

www.rit.edu/~704www/

Graduates of the civil engineering technology program translate the innovative concepts of the engineer into functioning systems and structures, using the language of codes, working drawings, and specifications. The mission of the civil engineering technology program is to provide an academically demanding education to meet students' needs and properly prepare them for a successful career after graduation.

The main objective of this program is to prepare individuals to attain gainful employment in the field of civil engineering technology, construction management, or any other closely related field. In addition, the program teaches the skills necessary for graduates to pursue additional education, certification, or professional licensure. Another objective of the program is to

allow graduates to attain growing levels of responsibility and leadership throughout their career. Course work and extracurricular activities encourage students to participate in organizations or activities 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 their specific interests.

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

Faculty

Faculty members have outstanding academic credentials and industrial experiences. They serve as consultants and professional engineers in their fields of expertise. They also participate in professional associations.

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 use their professional and technical expertise to enhance the engineering technology program and strengthen its future development.

Transfer admission

The admission of transfer students at the third-year level is open to all students who have already received an appropriate associate degree, which should include:

- Technical math (2 semesters of college-level math with an introduction to calculus)
- Drafting (to include CAD)
- Technical physics (2 semesters)
- Soil mechanics
- Plane surveying
- Route surveying
- Statics (mechanics)
- Strength of materials
- Methods and materials of construction

Students lacking these courses 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. Several graduates have completed master's degrees, a large number have gained registration in several states as professional engineers, and several manage their own consulting firms.

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.

	Qtr. Cr. Hrs.
Water Resources	
0608-482 Hydrology	4
0608-485 Hydraulic Structures	4
0608-480 Groundwater Hydraulics	4
Environmental Controls	
0608-510 Design of Water Treatment Facilities	2
0608-514 Land Use Planning	4
0608-520 Design of Wastewater Treatment Facilities	4
0608-525 Resource Recovery/Waste Management	4
Construction Management	
0608-500 Labor Relations	2
0608-509 Cost Estimating	4
0608-560 Construction Project Management	4
0608-544 Contracts and Specifications	2
Structures	
0608-470 Timber Design	4
0608-496 Reinforced Concrete Design	4
0608-497 Structural Steel Design	4
Building and Heavy Construction	
0608-460 Construction Equipment	2
0608-505 Construction Safety	2
0608-535 Pavement Design	4
0608-444 Mechanical Equipment	2
Other Electives	
1016-319 Data Analysis	4
0610-440 Applied Thermodynamics	4
0630-370, 372 Environmental Geology, Lab	4

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.

Civil engineering technology, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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, Lab 1017-211, 271	4
	Problem Solving and Communication with Computers 0608-225	2
	Introduction to Statics 0610-302	4
	College Physics II, Lab 1017-212, 272	4
	Civil Engineering Graphics 0608-220	4
	Liberal Arts*	16
	Wellness Education†	1
	First-Year Enrichment 1105-051, 052	2
Second Year	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
	(Or completion of an appropriate associate degree or equivalent)	

Third Year	Introduction to Civil Engineering Technology, Transfer 0608-199	1
	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
Fourth Year	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
Fifth Year	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.*

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 in structural design that consists of five 4-quarter-credit-hour courses. The program is offered on campus and online.

This certificate sequence includes 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 and needing additional training or those with a bachelor's degree in civil engineering, civil engineering technology, or architecture 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
Total Quarter Credit Hours	20

Electrical Engineering Technology

Michael Eastman, Department Chair
Steven M. Ciccarelli, Program Chair

www.rit.edu/ect

The five-year bachelor of science program in electrical engineering technology includes more than a year of cooperative education experience for full-time students. The upper division of the program provides a viable option for students who have completed their associate degree and desire to continue their education in engineering technology.

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, telephone (410) 347-7700.

The first two years of the program provide students with foundation courses 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, the liberal arts, advanced circuits and electronics, transform methods, control systems, analog and digital electronics, and mechanical engineering technology. The program is completed with the student's choice of free electives or mechanical/manufacturing and professional electives. Professional elective sequences are available 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 will help to determine the best choices.

Students begin their cooperative education experience in the third year of the program and are required to complete five quarters of co-op experience. A co-op counselor is assigned to each student.

The electrical engineering technology program consistently achieves its long-term objectives. Graduates, five or more years after graduation, will have:
- attained gainful employment in the field,
- pursued additional formal education and/or certification, and
- attained increasing levels of responsibility and leadership in their chosen field.

These goals recognize that our graduates 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.

Transfer admission

Transfer admission is open to graduates of two-year associate degree programs in electrical or electronic engineering technology. Students currently enrolled in engineering science associate degree programs also may apply and 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 are also accepted, but may be required to complete some foundation courses before starting the third year of the program.

Possible professional electives

Option	Course Title	Prerequisite(s)
Power systems		
0609-550	Power Systems I	0609-337 or 0609-411
0609-552	Power Systems II	0609-550
Communications systems		
0609-534	Communication Systems I	0609-333 and 0609-363
0609-535	Communication Systems II	0609-534
Optics		
0609-554	Electro-optic Devices	0609-362
0614-520	Fiber Optic Telecommunications Technology	1016-304, 1017-212 and (0614-483 or 0609-408)
Embedded Systems		
0618-561	Embedded System Design I	0618-438
0618-562	Embedded System Design II	0618-439 and 0618-561
Telecommunications		
0614-561	Network Engineering (3 credits)	1016-304, 0614-477, 0614-475
	< AND >	
0614-562	Network Engineering Lab (1 credit)	
0614-574	Networking Planning and Design	0614-479, 0614-561, 562

Electrical engineering technology, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	ExCiTe Introduction to ECT ET 0618-213	4
	Circuit Theory I 0609-214	4
	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
	Microcomputers 0618-303	4
	Digital Fundamentals 0618-301	4
	Calculus B 1016-272	4
	Wellness Education†	0
Second Year	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 1017-211, 212, 213	12
	Calculus C 1016-273	4
	Data Analysis 1016-319	4
	Wellness Education†	0
	(Or completion of an appropriate associate degree or equivalent)	

Third Year	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
Fourth Year	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
Fifth Year	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 (1019-422) or equivalent.

Computer Engineering Technology

Michael Eastman, Department and Program Chair
www.rit.edu/ect

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 both disciplines, along with the solid foundation in math, science, and general education, enables the program to meet its goal of producing well-prepared graduates. Students will graduate with a depth of knowledge, a breadth of experience, and an attitude of professionalism that will inspire them to pursue successful careers in their chosen professional field and embark on a path of lifelong learning. Specific program outcomes are available on the department website, www.rit.edu/ect.

RIT's computer engineering technology program is accredited by the Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Maryland 21202, telephone (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.

Transfer admission

Transfer admission is open to graduates of closely allied associate degree programs. Transfer students from such programs may normally expect to 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

Because of the need in the computer industry for professionals with diversified areas of expertise, the computer engineering technology program has a required three-course professional concentration sequence. This concentration, offered in the areas of computer science, systems administration, local area networks, wide area networks, and communications systems, allows students to customize their education, yet ensures depth of knowledge in a subject matter beyond the core curriculum.

In addition to the professional concentration electives, the computer engineering technology curriculum has three free electives. These electives can be used to pursue minors, to provide additional technical expertise for greater career specialization, or to explore courses that fulfill personal satisfaction and growth.

Possible professional concentrations

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
4050-4050-516 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
0614-475 Switching Technologies

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

Computer engineering technology, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	Data Analysis 1016-319	4
	Technical Programming II, III 0618-232, 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
Third Year	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
Fourth Year	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
Fifth Year	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
Total Quarter Credit Hours		192

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

Telecommunications Engineering Technology

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

www.rit.edu/ect

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. Starting with a basis in electronics and computing, students go on to 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. A description of the specific program objectives is available on the department website at www.rit.edu/ect.

The telecommunications curriculum contains a sufficient number of electives that students can tailor their studies to their interests or pursue a minor. If the 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 can provide the necessary background for the challenges they'll face as a future manager.

Students begin their cooperative education experience in the third year of the program and are required to complete five quarters of co-op. A cooperative education counselor is available for each program.

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

Transfer admission

Transfer admission is open, following a course-by-course evaluation, to those who have attended two-year associate degree programs. 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.
First Year	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
Second Year	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
		4
Third Year	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
Fourth Year	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
Fifth Year	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
	Total Quarter Credit Hours	*194*

* *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 bachelor of science degree and a master of science 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 for completing the option 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.
First Year	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
Second Year	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
Third Year	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
Fourth Year	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
Fifth Year	Telecommunication Network Engineering 0614-761	4
	Telecommunication Systems 0614-764	4
	Telecommunication Concepts 0614-720	4
	Telecommunication Principles 0614-722	4
	Telecommunication Project Management 0614-726	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
	Telecommunications Protocols 4002-746	4
	Liberal Arts*	8
	Free Elective	4
	Total Quarter Credit Hours	**230**

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

Manufacturing and Mechanical Engineering Technology/Packaging Science

Daniel P. Johnson, Chair
Thomas Voss, Associate Chair

www.rit.edu/~719www/

The manufacturing and mechanical engineering technology/packaging science department provides a supportive, cooperative, and synergistic environment for the delivery of undergraduate and graduate programs in: electrical/mechanical engineering technology, manufacturing engineering technology, mechanical engineering technology, and packaging science.

The department is a leader in providing innovative career-oriented education in the design, manufacturing, packaging, and distribution of goods. The associate degree program is in mechanical technology. The three bachelor of science programs in engineering technology are accredited by the Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Maryland 21202-4012, telephone (410) 347-7700.

Instructional and research laboratories for all of the programs are in the College of Applied Science and Technology building and 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.

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 programs.) 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 applicable 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 at RIT 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 of 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 begin to 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 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/mmetpsl#

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, telephone (410) 347-7700.

Program goals

The electrical/mechanical engineering technology program strives to prepare 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.

Program educational objectives

Graduates from RIT's electrical/mechanical engineering technology program will demonstrate:

- a professional work ethic and a commitment to lifelong learning, quality, and continuous improvement through the clear ability to assume increasing levels of technical and/or management responsibility.
- participation and leadership while working on teams involved in the analysis, design, development, implementation, or oversight of electrical, mechanical, and/or manufacturing systems and processes.
- an ability to design effective and efficient new products, systems, and processes.
- effective communication at all levels of an organization.

Curriculum

Approximately half of the courses in the degree program are in mathematics, physics, chemistry, communications, programming, and the liberal arts. In addition to these general education requirements, the core of the program consists of 66 quarter credit hours covering the disciplines of electricity, electronics, microprocessors, mechanics, materials, thermal science, solid modeling, and manufacturing processes. Once a student completes the core, he or she may select a group of three courses in a particular discipline, called an upper-division technical concentration. The student may use this concentration to either tailor the degree to meet specific employment objectives or establish a technical minor. In addition, students are required to complete 24 quarter credit hours of electives (12 as free electives and 12 as technical electives).

Transfer admission

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 that the student 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.

Sample technical concentrations

The following is a sample of the upper-division technical concentrations available. A student will typically take three courses chosen from a set of three to seven courses in a particular concentration. Other concentrations can be developed to meet the needs of a particular student. Examples of concentrations include: electrical power systems, manufacturing management, telecommunications, structures—civil, safety technology, and environmental management.

A student may also use appropriate courses to fulfill the requirements for a minor.

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

		Qtr. Cr. Hrs.
First Year	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
Second Year	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

Third Year		
	College Chemistry 1011-208	4
	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

Fourth Year		
	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

Fifth Year		
	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

	Total Quarter Credit Hours	**194**

* *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

Leaders in the manufacturing engineering profession estimate that the present shortage of qualified manufacturing engineers and technologists is between 50,000 and 100,000 people—and the need is increasing. They also estimate that between 20,000 and 30,000 new jobs are created in manufacturing engineering every year. The two principal factors generating this demand are industrial productivity and technological innovations.

Realizing that competitive positions in world and domestic markets are tied to the productivity of manufacturing units, there is considerable effort by industrial organizations to improve productivity. This worldwide effort is causing organizational and planning changes in many corporations that now recognize the manufacturing unit as the key to profits. For example, many corporations have placed manufacturing engineers in charge of new product design functions in an effort to ensure product manufacturability.

Efforts to improve productivity have led to the rapid introduction of new processes and equipment and increased levels of automation. This has created a demand for personnel well versed in the new manufacturing technologies: 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 designed to meet industry demands and is operated on the cooperative education plan. The BS in manufacturing engineering technology is accredited by the Technology Accreditation Commission of ABET, 1 Market Place, Suite 1050, Baltimore, Maryland 21202, telephone (410) 347-7700.

Program goal

The goal of the manufacturing engineering technology program is to prepare individuals for professional employment in the product design, development, and manufacturing field. This 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.

Program educational objectives

Graduates from the manufacturing engineering technology program will demonstrate:

- a professional work ethic; a commitment to lifelong learning, quality, and continuous improvement through the clear ability to assume increasing levels of technical and/or management responsibility.
- leadership and participation in teams that act as change agents and innovators in product design and manufacturing-related organizations.
- the ability to drive the design of manufacturable products, design effective and efficient new production systems, and improve the performance of supply chains.
- effective communication at all levels of an organization.

Curriculum

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

Transfer admission

Transfer students 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 the admission requirements.

Manufacturing engineering technology, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	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
Third Year	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
Fourth Year	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
Fifth Year	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

The upper division of this program may be taken on a part-time basis during the evening by those who are employed full time and desire to receive an accredited baccalaureate degree.

The typical evening student requires approximately 13 quarters to complete the upper-division course requirements. In the early quarters, the fundamentals of mathematics, science, engineering, electronics, and processes are emphasized to provide the background 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 your program technical elective content.

Mechanical Engineering Technology

William Leonard, Program Chair

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.

Mechanical engineering technology students will study the foundations of mechanics, materials, and energy. Students will learn technical skills such as computer-aided design, computer-aided engineering, how to test materials, and how to make parts. Students also will learn to apply these principles and skills to the various fields of mechanical engineering technology—such as product and machine design, power generation, 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, telephone (410) 347-7700.

Program goals

The goal of the program is to prepare graduates 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.

Program educational objectives

Program educational objectives for mechanical engineering technology were established with the assistance of the industrial advisory board. Graduates will demonstrate the following objectives:

- a professional work ethic, a commitment to lifelong learning, quality, and continuous improvement through the clear ability to assume increasing levels of technical and/or management responsibility.
- participation and leadership while working on teams involved in the analysis, design, development, implementation, or oversight of mechanics and/or manufacturing systems and processes.
- an ability to design new and improved products, systems, and processes that are appropriate for their use.
- effective communication at all levels of an organization.

Curriculum

In the early quarters, students develop their skills in the fundamentals of mechanics, mathematics, materials technology, and computer-aided design. In later quarters, courses focus both on mechanical design and applied thermofluid engineering. The program includes five technical electives and three free electives, making it possible for students to create a specialization by using

course electives 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.

Transfer admission

Transfer students enter this program at the third-year level, having received an appropriate associate degree in mechanical technology, design-drafting technology, air-conditioning technology, engineering science, or an acceptable equivalent. It is expected that these associate degree programs will have provided the student with background in the following:

- 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
- mechanical design

Elective concentrations in mechanical engineering technology

In the last three quarters of the program, students may elect to take 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 a baccalaureate degree 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 technology, associate degree program

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 for continuing their studies toward a baccalaureate degree in engineering technology. The program begins with courses in mathematics, physics, computer-aided drafting and design, and manufacturing processes. The advanced portion of the technical program covers topics in mechanics, hydraulics, materials, and machine design. Courses in composition, communication, social science, and humanities round out the program.

Mechanical engineering technology, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	Introduction to Statics 0610-302	4
	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
Third Year	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
Fourth Year	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
Fifth Year	Technical Electives	12
	Free Electives	8
	Liberal Arts*	8
	General Educational 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.
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.

Packaging Science

Thomas Voss, Program Chair

http://it.rit.edu/~pacsci/local/bachelor.maml

The interdisciplinary packaging science program, leading to a bachelor of science degree, provides educational opportunities for students seeking careers in the multifaceted packaging industry. Graduates are prepared for initial employment in such areas as package development, sales, purchasing, structural design, production, research, and marketing.

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.

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.

Program educational objectives

Graduates from the packaging science program will demonstrate:
- a professional work ethic and a commitment to lifelong learning through the clear ability to achieve increasing technical/management responsibility.
- the ability to lead and participate in teams that act as change agents and innovators in the packaging field and related organizations.
- the ability to design effective and efficient new packaging systems as well as improve the performance of existing packaging systems.
- the ability to communicate at all levels of an organization and articulate the economic and organizational importance of packaging to companies.

Program characteristics

The program is:
- Career-oriented—Graduates are ready to enter the work force in a position of responsibility.
- Interdisciplinary—Students become familiar with the many facets of packaging through courses in several RIT colleges.
- Flexible—Students have ample opportunity to customize their programs with minors, according to interest.
- Representative of industry needs—Curriculum content is developed with the assistance of an industry advisory board, consultants from industry, and educational specialists.
- Adaptable to a modified cooperative education plan— Co-op can be scheduled at the student's convenience, following the development of appropriate skills.

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.

Industrial Advisory Board

National industry leaders compose the Industrial Advisory Board, through which they contribute professional and technical expertise to undergraduate programs. This strengthens and develops the program to reflect the dynamics and growth of the industry.

Cooperative education

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

Transfer admission

Transferring into the program with advanced standing is particularly advantageous, since RIT has had many years of experience in assimilating graduates of two-year colleges into its programs and moving them directly into a chosen career field. 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.
First Year	New Student Seminar I 0607-200	1
	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
	Elementary Calculus I, II 1016-214, 215‡	6
	College Chemistry 1011-208	4
	Introduction to Chemistry of Materials, Lab 1011-273, 277	4
	Introduction to Organic Chemistry, Lab 1011-213, 207	4
	Principles of Microeconomics 0511-211	4
	Liberal Arts*	8
	Wellness Education†	0
	First-Year Enrichment 1105-051, 052	2

Second Year	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
	Electives	2
	Wellness Education†	0
	Cooperative Education 0607-499	Co-op
Third Year	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
	Math/Science Electives§	8
	Effective Speaking 0535-501	4
	Liberal Arts*	8
	Electives	4
	Cooperative Education 0607-499	Co-op
Fourth Year	Packaging Regulations 0607-462	4
	Professional (Packaging) Electives	12
	Liberal Arts*	12
	Electives	16
	Total Quarter Credit Hours	**188**

* 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

The School of Hospitality and Service Management offers a bachelor of science degree in hospitality and service management. Students can tailor their degree toward their professional goals by choosing one of seven concentrations, including: 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. The school also offers a separate degree program in nutrition management.

The school prepares students for a wide variety of career choices that include, but are not limited to, 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 a common set of abilities: creative problem solving, technical knowledge, communication skills, and leadership. Our first priority is to equip students with these skills and qualities.

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.

The curriculum is integrated, encompassing a broad base of competencies defined in partnership with faculty, students, and industry. Students take courses that contribute to building a strong concept of the total industry 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.

The goal is to offer students a rigorous, challenging, and interdisciplinary program of study in order to develop their talents. It provides them with the opportunity to develop their full potential in a managerial environment. Small classes promote a dynamic learning interaction among faculty, students, and industry professionals.

Freshmen not sure of a career field can apply for an undeclared program within the school. Prior to fall enrollment of the sophomore year, students must decide upon a concentration. This option allows them to experience courses in all fields within the hospitality industry before selecting a specific program. 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.

Vision statement
The School of Hospitality and Service Management is a leader in hospitality, nutrition, and service management education by creating an environment of both individualized and team-oriented learning, fusing the human values of hospitality, applying future technologies and innovation, and highlighting cultural diversity in a highly integrated global service economy.

Objectives
It is the program's mission to prepare students to excel in their chosen profession by developing:
- theoretical and service strategies essential to professional executive-level management skills,
- the ability to apply knowledge and original thinking to solving management problems,
- the skills and techniques of leadership and teamwork,
- an awareness of and desire for a lifetime of learning, and
- an intellectual spirit for constructive thought and action in building a good life and effective citizenship.

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 order to graduate.

Co-op is one of the many ways students are introduced to hands-on learning and employment 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.

Many students find that their career goals take shape and become refined as they progress through co-op experiences. In general, co-op provides students with the opportunity to apply classroom instruction to actual work settings.

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
National industry leaders compose the National Advisory Board, contributing professional and technical expertise to undergraduate programs to strengthen their future development.

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

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.

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 aboard. Classes are taught by a combination of RIT faculty members and European instructors.

Facilities
Commercial equipment and laboratories are available to enhance the educational experience of all students. Henry's, a full-service, licensed restaurant, provides an excellent training environment for students, who manage 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.

Requirements
Students enrolled in the bachelor of science degree program in hospitality and service management will complete the requirements outlined in the following typical course sequence, including one of the eight program concentration areas.

Hospitality and service management, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	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
Third Year	Principles of Marketing 0105-363	4
	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
Fourth Year	Leadership Management in Service Culture 0619-470	4
	Senior Project 0619-490	4
	Free Electives	12
	General Education	16
	Cooperative Education 0621-499	Co-op
	Total Quarter Credits	**182**

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

Concentrations

Food management concentration
The food service industry employs more people than any other industry in the nation and will continue to do so as long as the public demands more services. Food service offers an array of work places far and wide, including 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.

Students in food service management experience a sampling of these food service sectors during cooperative education. By graduation, our students will have accumulated more hours of work than in any other hospitality program in the country. It is because of this depth of exposure that RIT students are in demand by food and beverage operations.

The program prepares students for management through lab experience in Henry's, a full-service, beverage-licensed restaurant. In addition, students develop competencies in problem solving and decision making through individual and team-based class projects, computerized exercises, and industry-related activities.

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. The program requires several management courses, including accounting, statistics, leadership management, technology in service systems, and assessment of service quality. These professional and business courses are balanced by a strong component of the liberal arts and science.

The first student chapter chartered by the New York State Restaurant Association is available to food service management students. The association's goal is to foster the interchange of ideas between industry and students and support professional growth in organizational and social skills. Juniors 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
Total Quarter Credits	*24*

Food marketing and distribution concentration

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: food service operations and food marketing, logistics, distribution, and packaging.

Many of the normal food management course requirements remain in this concentration. Other curriculum options include commodity analysis; food marketing; food processing, packaging, distribution, and national and global logistics; and quality assurance.

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
Total Quarter Credit Hours	*24*

Health systems management concentration

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, the ability to adapt to change, and a demonstrated level of achievement in education. This concentration of courses prepares students for entry-level positions in the administrative areas of health care. When combined with another concentration that is more clinical or hospitality-oriented, the health systems management con-

centration can result in a level of expertise valued by health care systems today. Graduates may achieve an entry management position within a health care system.

The concentration features a sequence of three survey courses and three specialized courses. For a person new to the health care field, it would be helpful for the survey courses to be completed before the specialty courses. This approach allows students to gain an understanding of the field before specific applications are discussed. These courses are offered in an online learning format only; some previous experience with this learning medium may be required.

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

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.

Hotel and resort management concentration

This is a professionally oriented curriculum for students interested in careers involving the management and operation of hotel, resort, leisure and related enterprises. A composite of discipline areas allows students to understand the physical characteristics of specific properties and gain the business expertise to manage and market them.

The concentration builds students' skills with a balanced academic program of the basic principles of hotel and restaurant operations, tourism, resort development and management, business and financial management, and the liberal arts. Students also will participate in cooperative education for three quarters, hands-on class projects, laboratory work, and school activities. Specialized courses include statistics, engineering systems and property management, assessment of service quality, technology in service systems, financial management for hotels, hotel marketing and sales, hotel and resort development, and casino management.

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. International co-ops are highly encouraged because they develop global linkages. Students have the opportunity to choose electives in one or two minor program areas. They can choose from any of the seven other program concentrations. Students develop communications skills through participation in student chapters of organizations and are encouraged to attend the annual international hotel/motel and restaurant shows in New York City and Chicago.

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
Total Quarter Credit Hours	*24*

Human resource management

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

The people in today's workplace affect numerous organizational outcomes, yet many employers don't put enough effort into attracting, developing, and retaining this valuable resource. Whether you work in hospitality, food, travel, service, or health care, effectively supporting your human resources is the key to gaining and sustaining competitiveness in your field.

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
Total Quarter Credit Hours	*24*

Travel and tourism management

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

Travel management combines a study of specialized courses in travel management with a sound general education that includes courses in accounting, management, marketing, and business law. The 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 hotel, 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
Total Quarter Credit Hours	*24*

Nutrition Management

Barbra A. Cerio-Iocco, Chair

www.rit.edu/cast/nsm/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 are involved 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 opportunities. Possible career paths may be developed 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.

Nutrition management**, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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	6
	Survey of Organic Chemistry, Lab 1011-202, 207	5
	Biochemistry 1011-203	4
	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
Second Year	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
Third Year	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
Fourth Year	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	5
	Total Quarter Credits	**188**

* 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

Abi Aghayere, Acting Chair

www.rit.edu/cast/et

In its 1997 report, "Global Environment Outlook," the United Nations Environment Programme concluded that "during the last decade, the environment has continued to degrade, and significant problems still persist," and charged that "the pace at which the world is moving toward a sustainable future is simply too slow."

Society realizes that environmental resources are finite and valuable and must not be used at a rate faster than that at which they can be replenished naturally. The question is: 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 program in environmental management and technology prepares students to move the organizations in which they work 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

Environmental management and technology students start their first cooperative education experience in the spring of their third year and will complete a minimum of four quarters. This will provide 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

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

Electives

The variety of electives in the curriculum permits 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.
First Year	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†	
Second Year	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†	

Third Year	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
Fourth Year	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
Fifth Year	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
	Total Quarter Credit Hours	**194**

* 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

Abi Aghayere, Acting Department Chair
Joseph M. Rosenbeck, Graduate Coordinator
Scott B. Wolcott, Undergraduate Coordinator

www.rit.edu/~704www/

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 bachelor of science degree in environmental management and technology and a master of science 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 degree 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 option is shown. Students interested in pursuingthis 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.
First Year	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
Second Year	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
Third Year	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
Fourth Year	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
Fifth Year	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
	Total Quarter Credit Hours	**232****

* 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
Total Quarter Credit Hours	*12*

* Introduction to Hydrology (0630-380) is a prerequisite.
** Environmental Geology (0630-370) is a prerequisite.

Certificate in Industrial Environmental Management

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. It covers all 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.

The industrial environmental management certificate is available in an online format for those wishing to continue their education while working.

All the courses offered under these certificate programs can be applied to either full-time or part-time offerings of the bachelor of science 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.

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
Total Quarter Credit Hours	*24*

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

Safety Technology

Josh Goldowitz, Chair

www.rit.edu/~704www/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.

Transfer admission

The admission of transfer students at the third-year level 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.

Students may enter the upper-division safety technology BS program from a wide variety of associate degree programs or with the equivalent of two years of college, including appropriate courses in math, science, and the liberal arts. In this program students will build on their foundation of science and math 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. Students will have the opportunity to solve actual safety problems provided by industry.

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

Cooperative education

Today's employers are looking for ambitious graduates who have professional work experience in addition to a quality academic background. Because the safety technology program requires a minimum of four quarters of cooperative education, students will get the chance to apply their skills in real-world situations before they graduate. Hundreds of employers recruit on campus each

year because they know RIT graduates have professional abilities, technical skills, and work experience that are current with industry demands. 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.
First Year	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
Second Year	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
Third Year	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
Fourth Year	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
Fifth Year	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

Abi Aghayere, Acting Department Chair
Joseph M. Rosenbeck, Graduate Coordinator
Scott B. Wolcott, Undergraduate Coordinator
www.rit.edu/~704www/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 simultaneously 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 degree program, have completed at least four quarters of undergraduate study, and have a cumulative GPA of at least 3.2.

Below is a model course schedule for completing the BS/MS program. Students interested in the BS/MS 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.
First Year	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
Second Year	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
Third Year	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

Fourth Year	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
Fifth Year	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
	Total Quarter Credit Hours§	**231**

* 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.

Certificates

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, and tornadoes.

Emergency management practitioner organizations and the federal government are working to develop 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 certificate program also is an excellent capstone program for individuals with associate degrees in fire science, environmental health and safety, or other areas of emergency response.

The six-course sequence is 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. Up to four credits may be awarded to emergency response agency personnel for appropriate training or experience.

Courses are scheduled so that the certificate may be completed in as little as one year. The courses in this upper-level program also may be applied toward professional requirements for the BS degree in applied arts and science and the BS degree in safety technology. Students must achieve a program 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	
Total Quarter Credit Hours	*24*

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 the seven 4-credit 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
Total Quarter Credit Hours	*28*

* 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

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 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 and may be obtained from an adviser or Professor Tom Moran, at (585) 475-4936.

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, please call (585) 475-2234 or e-mail cms@rit.edu. The CMS office is located in Building 1 (George Eastman Building), Room 2210.

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 and outside the center. There is a $150 fee per quarter credit hour for any credit earned.

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 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

The center's courses are conducted by full- and part-time instructors who teach what they do professionally. 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 through the center. 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 also use textbook readings, assignments, and exams to deliver course work. Students have access to instructors by e-mail, computer, telephone, or individual appointments. For more information about these and other online learning programs, call (585) 475-5089; for advising, call (585) 475-2234.

Financial aid

Specially trained RIT financial aid counselors can provide students with information about the grants and loans available for full- and part-time students. In addition to federal, state, and private programs, RIT has special financial aid programs for part-time students and students who have recently been laid off from their jobs. Many companies also offer employer education benefits that will pay for some or all of RIT's tuition costs. Active U.S. Army Reserve and National Guard members are eligible for benefits that pay up to 90 percent of tuition. To be eligible for financial aid, full-time students must be enrolled in at least 12 quarter credit hours; part-time students at least six quarter credit hours. Call (585) 475-2958 for more information.

Center for Multidisciplinary Studies Scholarship

The Center for Multidisciplinary Studies offers a scholarship to matriculated students in the center's programs with a GPA of 3.0 or better. 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.

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 (www.rit.edu/cms) to learn more.

Applied arts and science degrees

The Center for Multidisciplinary Studies offers students the opportunity to create individualized undergraduate programs of technical and professional study through its applied arts and science program. In this program, students work closely with faculty and advisers to design unique, multidisciplinary plans of study that combine several areas of professional knowledge.

The applied arts and science program is particularly appropriate for individuals who have prior college-level learning, are interested in changing majors, 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. The associate and bachelor of science degrees allow you to study several different professional and technical areas of study, selected specifically to meet your career and personal goals.

For your professional concentrations, you can draw on a wealth of educational resources from across RIT colleges and departments. Professional concentrations consist of graduate courses. 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 opportunity to develop a multidisciplinary program tailored to specific career and personal objectives. Students must achieve a program GPA of at least 2.0 in order to be certified for completion or graduation.

Course requirements, AAS and BS degrees in applied arts and science (See adviser for course options.)

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 program GPA of at least 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 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
Total Quarter Credit Hours	*20*

Human resource administration

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

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 program GPA of at least 2.0 in order to be certified for completion/graduation.

Certificate in Management Development

The management development certificate is earned by successfully completing a three-course sequence in management. The courses focus on practical applications of management theory; management problems, solutions, and ideas; and personal development as an effective manager.

The management sequence offers a comprehensive, integrated study of supervisory management. Topics covered include 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 program GPA of at least 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
Certificate Total	*12*

Management Diploma

In the management diploma program, students concentrate their studies in one of three specific areas of business and management that may be relevant on the job immediately.

Typically, the management 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 program GPA of at least 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
Total Quarter Credit Hours	*28*

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	BS only in addition to above	8	General Education‡	30	Two to four professional concentrations* To be developed by student and adviser.	48
			Liberal Arts Concentration#	12		
					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.

Diploma in marketing   Qtr. Cr. Hrs.

0681-200, 201, 202 Management Process	12
(or approved alternative)	
0681-361 Marketing	4
0681-261 Effective Selling	4
0681-263 Advertising Principles	4
Business Elective	4
Total Quarter Credit Hours	*28*

Diploma in human resource administration   Qtr. Cr. Hrs.

0681-200, 201, 202 Management Process	12
(or approved alternative)	
0619-480 Human Resource Management	4
0626-234 Interviewing Techniques	4
0680-311 Business Law I	4
Business Elective	4
Total Quarter Credit Hours	*28*

Specialized certificates

With change occurring in industry at a rapid pace, meeting professional and educational goals can be a challenge. Many employers are looking for upgraded skills while employees and students are looking to enhance their skills or take on a new direction professionally or personally. To help meet these challenges, programs are needed that can offer new skills or enhance current skills in a quick and efficient manner.

The center provides this opportunity through its 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 the computer for nearly every step of the creative process. The courses within this program 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
Total Quarter Credit Hours	*20*

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.

Core Requirements, All Business and Management AAS Programs

Professional program requirements are added to these core requirements

Professional Courses	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
Information Resources and Network Tools 0680-341	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				
Total	**44**	**Total**	**24**	**Total**	**24**

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

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 create professionals who understand how to do business on the Web. Graduates of the program will have a real grounding 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
Total Quarter Credit Hours	*24*

* 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
Total Quarter Credit Hours	*24*

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 can involve carefully planning the arrival of raw materials; pre-manufactured assemblies, labor, and other resources to 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.

Proper performance of an organization's logistical operations is critical to success in today's highly competitive and global environment. Skill and understanding of logistics technology, strategies, and management can lead to jobs and responsibilities with global and regional employers in both the private and government sectors.

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
Total Quarter Credit Hours	*12*

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
Total Quarter Credit Hours	*16*

* 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
Total Quarter Credit Hours	*12*

* 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
Total Quarter Credit Hours	*12*

* 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
Total Quarter Credit Hours	*12*

Organizational Change and Leadership

Profound and ongoing changes are taking place in organizations, and individuals need to be flexible and proactive in their response. The organizational change and leadership certificate will help students understand corporate culture and develop skills necessary to manage organizational and individual change. Through the study of leadership, corporate culture, change management, organizational behavior, and teams, individuals will understand and obtain the skills necessary to proactively manage change.

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
Total Quarter Credit Hours	*24*

Public Relations

Public relations communications are vital to virtually every business endeavor. Almost every organization employs individuals, either in house or by contract 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.

Underlying successful public relations are skills in two key areas: writing and graphic communication. The center offers a certificate program in each of these specialties. Both programs share a core of courses that provides an introduction to public relations and teaches widely used principles and techniques of advertising, project management, and persuasion. The professional writing program provides specialized instruction in writing marketing materials, inbound and outbound publications, corporate-level communications, and speeches and scripts. The graphic communication program (designed specifically to accommodate non-artists) focuses on understanding the components of the advertising process, the use of effective design principles in the preparation of layouts, and combining creative and technical skills to achieve design success.

These programs are intended 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 skill, 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.

Courses are scheduled so that the core and one or both of the certificate options may be completed in four quarters of part-time study. Students may earn one or both certificates, and students not wishing to take an entire certificate program may take specific individual courses. The professional writing option can be completed online.

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
Total Quarter Credit Hours	*10*

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
Total Quarter Credit Hours	*20*

Certificate in graphic communication

	Qtr. Cr. Hrs.
Core Courses	10
0688-355 Coordinating Publication Production	2
Electives*–Choose three of the following courses:	
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
Total Quarter Credit Hours	*21*

* 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 basic quality teaches the nuts and bolts of a quality organization and prepares students to introduce quality concepts to their organization. The certificate in quality implementation teaches how to put quality principles to work. Together, the certificate package can prepare students to work as quality trainers, facilitators, team leaders, or managers at various levels of an organization. Both certificate programs can be completed online.

Certificate in basic quality

	Qtr. Cr. Hrs.
0684-310 Introduction to Quality	4
0684-420 Statistical Quality Tools	4
0684-430 Management for Quality	4
Total Quarter Credit Hours	*12*

Certificate in quality implementation

	Qtr. Cr. Hrs.
0684-340 Quality Data Analysis	4
0684-410 Introduction to Lean Six Sigma	4
Elective	4
Total Quarter Credit Hours	*12*

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 three courses in the program 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 can be completed online.

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
Total Quarter Credit Hours	*12*

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 technologies grow, 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, designed to be completed in three quarters of part-time study, provides a strong, practical foundation in technical communication skills for those wanting to work in the profession or those whose advancement in other careers is directly related to their ability to communicate clearly, correctly, and concisely.

Certificate in basic technical communication Qtr. Cr. Hrs.

0688-333 Technical Writing and Editing	4
0688-363 Technical Document Design	4
Plus one of the following courses:	
0688-361 Research Techniques	4
0688-476 Instructional Design Principles	4
Total Quarter Credit Hours	*12*

The prerequisite for the basic sequence is demonstration (by examination, portfolio, or transcript) of a command of standard written English.

For those interested in more advanced professional development and instruction in specialized topics, the following sequence of courses is offered. Students may take courses in the advanced sequence simultaneously with those in the basic sequence. These courses are designed to be completed in three quarters of study.

Certificate in advanced technical communication Qtr. Cr. Hrs.

0688-544 Writing in the Sciences	4
0688-477 Managing Media Presentations	4
0688-475 Writing Software User Documentation	4
Total Quarter Credit Hours	*12*

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 program GPA of at least 2.0 to be certified for completion or graduation.

Courses in these sequences were developed with the assistance of working technical communicators and are taught by experienced professionals. Both certificate programs can be completed online.

Department of Military Science

Reserve Officer Training Corps (ROTC)—ARMY

Lt. Col. Lynn Lubiak, Professor of Military Science

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 assists students in developing their full potential—intellectually, physically, and emotionally. The program 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 obligations unless a student has received an ROTC scholarship or contract. Upon graduation from RIT, 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, members of the Army Reserve or National Guard, and junior ROTC graduates 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 enjoy unique events such as Dining Out, a formal dinner. 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 or rappelling as part of mountaineering instruction. Clubs and activities include the Ranger Challenge Team, the ROTC varsity sport. This team competes in military skills and physical stamina competitions with other colleges throughout the Northeast. A team may also be sponsored to compete in the prestigious Sandhurst Competition, a military skills and endurance event at which teams from the U.S. Military Academy at West Point, the British Military Academy at Sandhurst, and select ROTC teams from across the nation gather to compete at West Point. No other program on campus offers the same level of adventure and practical leadership experience that ROTC offers.

Scholarship opportunities

Army ROTC awards two-, three-, and four-year scholarships. A four-year ROTC scholarship is presently valued at more than $100,000. Students who have two or three years of college remaining are encouraged to compete for campus-based full-tuition and fees scholarships, which are worth $25,000 per year. University incentives are tied to three- and four-year Advanced Designee scholarships. In previous years, those scholarship winners received a room and board incentive, bringing the total value of their four-year scholarship to over $130,000. Please consult with the Office of Financial Aid and Scholarships for information on the Army ROTC scholarship. In addition to the tuition award,

$900 annually for books and a monthly cash stipend of $350-500 is provided.

Scholarship competition is based on academic achievement coupled with an assessment of the applicant's leadership potential. Both enrolled and non-enrolled participating students may compete for a scholarship. Students preparing to enter graduate studies also may be eligible. Visit our office in the Ross Building (Bldg. 10), Room A220, for more information, or visit the Cadet Command website at armyrotc.com or www.army.rotc.rit.edu. Using the online application, incoming freshmen should apply during the fall semester of their senior year of high school for four-year scholarships.

Financial benefits
A subsistence allowance of $300 to $500 per month is provided tax-free directly to each contracted ROTC cadet throughout the school year. RIT also offers incentives to all Army ROTC three- and four-year scholarship winners, ranging from flat-rate monetary assistance to full room and board (or the equivalent). To qualify for these incentives, students should file a Free Application for Federal Student Aid (FAFSA) form by March 15 of each year. For additional information, please contact the Office of Financial Aid and Scholarships at (585) 475-2186.

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 consists of the first two years of the program, normally the freshman and sophomore years of college. During the Basic Course, nonscholarship students have absolutely no military obligation. Basic Course classes emphasize the development of academic and life skills necessary to ensure that cadets become better students and to increase their 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 history, small-unit leadership, and problem solving. Students in the Basic Course register for a class and lab, and if they also register for the Army Conditioning Drills, they will receive 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 (the last two years of the program). Eligible Basic Course cadets also can compete to attend off-campus Army training opportunities such as the Army Airborne or Air Assault schools.

Leader Training Course
The Leader Training Course is a two-year 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). At this paid, 28-day Leader Training Course, students obtain the necessary skills and training to qualify for entry into the last two years of the Army ROTC program. The course teaches basic military skills while emphasizing leadership development. Students who successfully complete the camp 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 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.

Advanced Course
The Advanced Course is for students entering their last two academic years (co-op excluded) of college. The Advanced Course is similar to the Basic Course in organization and style, but the course content focuses 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 the focus. Upon entering their last year in the program, Advanced Course cadets are ranked against their peers in academics, performance at Advanced Camp (the required summer program after year three), and general on-campus performance. Based on these factors, the Army makes duty placement and job selections. Advanced Course cadets also have the opportunity to participate in a myriad of off-campus Army training opportunities such as Airborne, Air Assault, 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 Development and Assessment Course
The Advanced Course includes attendance at the ROTC Leader Development and Assessment Course at Fort Lewis, Washington, which normally occurs in the summer between the third and fourth years of college. During this course, Army ROTC cadets from across the nation gather for five weeks to demonstrate their leadership skills and potential. They are repeatedly placed in leadership positions and face problem-solving challenges that bring together all of the classroom and practical instruction they received on campus. Participants might be assigned to lead a 120-person cadet company as they prepare for training or to plan and lead a 10-person squad on a tactical night patrol. Regardless of the task, participants have the opportunity to demonstrate their leadership potential to their Army evaluators. Attendees are paid travel expenses and a salary for participating in this challenging and greatly rewarding experience.

For more information

To learn more about career opportunities through Army ROTC, visit or call the department of military science, Room A220, Ross Building. You also may contact us by e-mail at armyrotc@rit.edu or by telephone at (585) 475-2881. Visit our website at www.rit.edu/cast/armyrotc.

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

		Qtr. Cr. Hrs.
First Year, MS I	Introduction to Military Science 0640-201	2
	Applied Military Dynamics 0640-202	2
	Military Heritage 0640-203	2
Second Year, MS II	Military Geography 0640-301	2
	Psychology and Leadership 0640-302	2
	The Military and American Society 0640-303	2
Third Year, MS III	Military Tactics 0640-401	3
	Military Communications 0640-402	3
	Military Operations 0640-403	3
Fourth Year, MS IV	Army Training Systems 0640-501	3
	Military Administration and Logistics Management 0640-502	3
	Military Law and Ethics 0640-503	3
	Total Quarter Credit Hours	**30**

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

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. David Easley, Professor of Aerospace Studies

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. 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, confidence course. and physical fitness training. Field training evaluates a student's leadership potential and qualifies the cadet for entry into the Professional Officer Course.

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

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

Other programs

Several other professional development programs are offered to cadets. The programs include freefall school, foreign language immersion, 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, pass a physical exam, complete an interview, and pass a physical fitness test. Please contact the AFROTC office at (585) 475-5197 for complete details.

Scholarships

AFROTC offers a variety of scholarships to qualified students in many academic disciplines. Two-, three-, and four-year scholarships are available in technical and nontechnical fields. Competition is selective, and the needs of the Air Force dictate which

scholarships will be offered on a yearly basis to college students. High school students can apply online at www.afrotc.com to compete for four-year scholarships through a national board process.

Financial assistance

Every scholarship cadet and all Professional Officer Course cadets receive a monthly allowance between $300–500. RIT selectively augments four-year high school scholarships with free room and board. In order to receive scholarship assistance, students must file a Free Application for Federal Student Aid (FAFSA) form by March 15. Contact the Office of Financial Aid and Scholarships for further information.

Minor in military studies and leadership

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

For more AFROTC information

Call the department at (585) 475-5197 or visit us on campus in the Ross Building (Bldg. 10), Room A250.

Department of aerospace studies—AFROTC, typical course sequence*

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

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

www.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: the liberal arts and sciences, a business core, a major and cooperative education experience. The liberal arts and sciences component includes courses in the humanities, mathematics, science, and social science. Students are expected to display proficiency in oral and written forms of communication, as well as choose a liberal arts concentration or minor.

In the third component, the major, students concentrate their study in a specific business career field.* The college offers the following majors:

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

*An undeclared business option is available to students during their first and second years to allow them to explore different offerings prior to formalizing their career focus.

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

By building on the liberal arts and sciences and business core components, the major provides mastery of marketable skills. Students also can pursue an additional business focus area by completing one of the eight business minors offered by the college. Advisers are available to assist students in choosing a minor that complements their area of study or personal interests. Business majors may pursue any of the minors with the exception of business administration.

All students in the Saunders College must complete required courses, which provide an understanding of all facets of business and serve as a foundation 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
0102-320 Organizational Behavior
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

Note: An ethics course is a required component for all business majors.

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.

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 1000 companies worldwide. The college's classrooms and study areas feature wireless access. The college has a hands-on network technology lab where students gain experience in networking systems and administering information in a networked environment.

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 available to assist students in their 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 accrediting agency for schools of business.

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 is prepared to provide 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 numerous options. 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, the Saunders College offers minors in the following areas: accounting, business administration, entrepreneurship, finance, international business, management, management information systems, and marketing. This option is available to business students as well as students from other colleges. For further information, contact a college adviser.

Graduate programs

The college offers the following graduate degree programs: master of business administration, 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. These professional programs prepare students for all aspects of business management and offer a concentration in a field of specialization. An executive master of business administration degree also is offered. Details are contained in the Graduate Bulletin, available from the Office of Graduate Enrollment Services.

Undergraduate business students may want to consider the 4+1 MBA program or the accelerated dual degree program, which allows students to complete both the BS and MBA degrees in five years. For more information, contact the Saunders College at (585) 475-7935.

Accounting

http://cob.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). Other students may tailor their major to meet diverse commercial, government and not-for-profit opportunities.

Accounting, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	First-Year Enrichment 1105-051, 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
Second Year	Financial and Management Accounting 0101-301, 302	8
	Accounting Information Systems 0101-345	4
	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
Third Year	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
	Principles of Marketing 0105-363	4
	Liberal Arts*	12
	Free Electives	8
	Cooperative Education‡	Co-op
Fourth Year	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
	Free Electives	8
	General Education	12
	Total Quarter Credit Hours	**182**

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

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

Other options available for students seeking careers outside of public accounting include:

- Utilizing the four free electives to obtain a minor in management information systems
- Utilizing the four free 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 law school, with corporate law as a career goal
- Utilizing the four free electives to complete accounting, business, and liberal arts electives to prepare for a career in government service

Consumer Finance

http://cob.rit.edu/undergraduate/consumer_finance/index.php

The bachelor of science degree in consumer finance lets students collaborate with a broad range of consumer financial services organizations. Students will team up with financial services industry leaders through co-ops, fieldwork, or college-sponsored projects. Additionally, financial services executives act as a significant resource as guest lecturers or a source of real-world case study material for students.

The program's three options allow students to follow the path that best meets their interests. The Wealth Management and Advisory Services option is structured to prepare students for employment in the areas of investments, investment advisory, and portfolio management. Completing this option prepares students to sit for the Chartered Financial Analyst (CFA) and the Certified Financial Planner (CFP) programs.

The Retail Banking and Insurance option prepares students for employment in the banking and insurance industries. Typical job opportunities include bank operations officers, bank loan officers, bank branch managers, and insurance sales agents.

The Consumer Credit and Debt Management option educates students for employment in debt counseling and debt management industries. Typical job titles might include credit analyst, loan counselor and officer, bank loan officer, bankruptcy trustee, and real estate agent.

Consumer finance, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Business 1: Ideas and Creativity 0102-260	4
	Business 2: Computer-Based Analysis 0112-275	2
	Principles of Microeconomics 0511-211	4
	First-Year Enrichment 1105-051, 052	2
	Money, Consumers, and Family 0116-221	4
	Principles of Macroeconomics 0511-402	4
	Data Analysis I 1016-319	4
	Data Analysis I Lab 1016-379	2
	Personal Financial Management 0104-220	4
	Professional Communication for Business 0535-352	4
	Financial Accounting 0101-301	4
	Liberal Arts*	12
	Wellness Education†	0
Second Year	Management Accounting 0101-302	4
	Corporate Finance 0104-350	4
	Interpersonal Communication 0535-414	4
	Public Relations 0535-421	4
	Principles of Marketing 0105-363	4
	Option Course	4
	Principles of Advertising 0535-461	4
	Legal Environment of Business 0110-319	4
	Public Speaking 0535-501	4
	Liberal Arts*	12
Third Year	Organizational Behavior 0102-320	4
	Intermediate Investments 0104-453	4
	Lab Science	4
	Professional Selling 0105-559	4
	Financial Institutions and Markets 0104-361	4
	Personal and Small Business Taxation 0101-522	4
	Option Course	4
	Liberal Arts*	12
	Cooperative Education	Co-op
Fourth Year	Codes of Conduct 0116-581	4
	Option Courses	8
	Free Electives	16
	General Education	4
	Cooperative Education	Co-op
	Math/Science Electives	8
	Total Quarter Credit Hours	**182**

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

Finance

http://cob.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 given 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.
First Year	First-Year Enrichment 1105-051, 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
Second Year	Financial and Management Accounting 0101-301, 302	8
	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
Third Year	Organizational Behavior 0102-320	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	8
	Cooperative Education‡	Co-op
Fourth Year	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
	Free Electives	8
	General Education	8
	Total Quarter Credit Hours	*182*

* 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

http://cob.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.
First Year	First-Year Enrichment 1105-051, 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
Second Year	Financial and Management Accounting 0101-301, 302	8
	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
Third Year	Organizational Behavior 0102-320	4
	Co-major Courses	8
	Liberal Arts*	12
	General Education	4
	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
Fourth Year	Strategy in Global Environment 0113-500	4
	Strategy and Policy 0102-551	4
	Operations and Supply Chain Management 0106-401	4
	Co-major Courses	8
	Free Electives	12
	General Education	4
	Choose one of the following:	4
	Business Government and Society 0102-507	
	Legal Environment of Business 0110-319	
	Total Credit Hours	*182*

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Two quarters of cooperative education is 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 that 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

http://cob.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.
First Year	First-Year Enrichment 1105-051, 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
Second Year	Financial and Management Accounting 0101-301, 302	8
	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
Third Year	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
Fourth Year	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
	Total Quarter Credit Hours	***182***

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

Management Information Systems

http://cob.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 a thorough understanding of business processes, leading enterprise system technologies, and the tools for analysis, design, and implementation of computer information systems.

After completing the program's core courses, students have a choice of two paths: enterprise systems or systems analysis. In the enterprise systems path, students gain valuable experience by learning to use enterprise systems technologies. In the systems analysis path, students develop an expertise in integrated systems, including analysis, design, programming, and testing of various computer information systems.

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.
First Year	First-Year Enrichment 1105-051, 052	2
	Business 1: Ideas and Creativity 0102-260	4
	Business 2: Computer-Based Analysis 0112-275	2
	Business 3: Commercialization 0112-280	4
	Business Information Systems Processes 0112-315	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
Second Year	Financial and Management Accounting 0101-301,302	8
	Global Business: An Introduction 0113-310	4
	Corporate Finance 0104-350	4
	Principles of Marketing 0105-363	4
	Business Programming 0112-330	4
	Database Management Systems 0112-340	4
	Systems Analysis and Design 0112-370	4
	Liberal Arts*	12
	Laboratory Sciences	8
Third Year	Organizational Behavior 0102-320	4
	Legal Environment of Business 0110-319	4
	Network Technologies 0112-380	4
	Liberal Arts*	12
	Free Electives	8
	General Education	8
	Cooperative Education‡	Co-op
Fourth Year	Strategy and Policy 0102-551	4
	Operations and Supply Chain Management 0106-401	4
	Project Management and Practice 0112-520	4
	MIS Elective	4
	Free Electives	8
	General Education	12
	Total Quarter Credit Hours	***182***

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

Marketing

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

Marketing has long been recognized as an element critical to the success of modern business operations. The overall process of entering markets, creating value for customers, and developing profits are the fundamental challenges for the contemporary marketing manager. These marketing basics apply to governmental agencies, not-for-profit organizations, and service organizations as well as 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 communications skills through classroom experiences and their work on real and simulated business challenges. Upon completing the program, students have demonstrated proficiency in analyzing and understanding buyers as well as developing and delivering professional sales presentations, and designing and implementing 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.
First Year	First-Year Enrichment 1105-051, 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
Second Year	Financial and Management Accounting 0101-301, 302	8
	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
Third Year	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
Fourth Year	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
	Marketing Elective	4
	Free Electives	12
	Total Quarter Credit Hours	*182*

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

New Media Marketing

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

The program in new media marketing is an interdisciplinary major with requirements in marketing, imaging, graphic arts, information systems, and management. The program provides an overall assessment of the current and future state of the graphic communications industry. This program is designed to meet the graphic imaging industry need for broadly educated marketing 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.
First Year	First-Year Enrichment 1105-051, 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
Second Year	Financial and Management Accounting 0101-301, 302	8
	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
Third Year	Organizational Behavior 0102-320	4
	Internet Marketing 0105-440	4
	Integrated Marketing Communications 0105-560	4
	Business Elective	4
	Media Elective	4
	Liberal Arts*	12
	General Education	8
	Cooperative Education‡	Co-op
Fourth Year	Business, Government and Society 0102-507	4
	Strategy and Policy 0102-551	4
	Business Elective	4
	Operations and Supply Chain Management 0106-401	4
	Free Electives	12
	General Education	12
	Total Quarter Credit Hours	*182 or 184***

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

B. Thomas Golisano College of Computing and Information Sciences

Jorge L. Díaz-Herrera, Dean
www.gccis.rit.edu

The B. Thomas Golisano College of Computing and Information Sciences houses the departments of computer science; information technology; software engineering; and networking, security, and systems administration. These departments are supported by extensive, cutting-edge laboratory facilities. Also part of the college is the Center for Advancing the Study of Cyberinfrastructure, which offers a common meeting ground where students from various disciplines can conduct research or work on cutting-edge projects supplied by industrial partners. The center supports the college's doctorate program in computing and information sciences.

The Golisano College focuses on computing disciplines in the broadest sense to meet the interests of its students and the needs of industry. Interdepartmental and intercollege cooperation are basic to its function. The college has more than 100 faculty, 2,700 students, 46 technical and support staff, and state-of-the art facilities dedicated to learning, teaching, research, and development.

One of the largest and most comprehensive computing schools in the nation, the Golisano College offers eight bachelor of science degrees:

Applied networking and system administration
Computer science
Game design and development
Information technology
Information security and forensics
Medical informatics
New media interactive development
Software engineering

All departments within the Golisano College require an extensive cooperative education experience. The computer science and medical informatics programs offer a BS/MS option. The college also offers a Ph.D. in computing and information sciences.

Admission

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

Faculty

Any academic department or program can be only as strong as its faculty. The Golisano College's faculty members are dedicated to teaching, applied research, and professional development, with an emphasis on student involvement and career preparation. Most have significant industrial experience in addition to outstanding academic credentials. Faculty members provide leadership in implementing innovative teaching techniques as well as anticipating and meeting the needs of students and industrial partners.

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 1,500 computer work stations housed in 56 labs studios 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 for designated course sections. 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.

To provide space for students and equipment, a 126,500-square-foot wireless building was completed in January 2003 and is the home of the Golisano College. This building allows for general use as well as specialized labs, such as those dedicated to wireless networking and computer vision. 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 the department chair of the program they are enrolled in, 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 certain program 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

The department of computer science offers programs leading to a bachelor or master of science degree in computer science. At the undergraduate level, the program is offered to high school and two-year college graduates, as first-year and upper-division students, respectively. 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.
First Year	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 1105-051, 052	2
	Wellness Education†	0
Second Year	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
Third, Fourth and Fifth Years	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
Total Quarter Credit Hours		***190***

* *Please see Liberal Arts General Education Requirements for more information.*
† *Please see Wellness Education Requirement for more information.*
** *Students complete a lab science sequence by selecting University Physics (1017-311, 312, 313), General and Analytical Chemistry (1011-215, 216, 217, 205, 206,227, or General Biology (1001-201, 202, 203, 205, 206, 207).*
# *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.
Computer Science	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
Liberal Arts	Liberal Arts*	52
	Wellness Education†	0
Mathematics and Science	Calculus I, II, III 1016-281, 282, 283	12
	Probability 1016-351	4
	Discrete Mathematics 1016-265, 366	8
	Science Electives	8
	Choose one science sequence:	
	Physics I, II, III 1017-311, 312, 313	12
	Chemistry I, II, III 1011-215, 216, 217, 205, 206, 227	12
	Biology I, II, III 1001-201, 202, 203, 205, 206, 207	12
Other	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Free Electives	12
	Related Electives**	12
	Cooperative Education (4 quarters)	Co-op
	Total Quarter Credit Hours	**190**

* *Please see Liberal Arts General Education Requirements for more information.*
† *Please see Wellness Education Requirement for more information.*
‡ *The computer science-related electives requirement 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 Technology

James Leone, **Chair**

www.it.rit.edu

Information technology has emerged over the last decade as a unique academic discipline, distinct from computer science, software engineering, and computer engineering. While those disciplines focus on creating new technology, information technology focuses on selecting, integrating, and deploying technology to meet the needs of end users. In other words, information technologists are users' advocates whose primary mission is to make things work for end users in all sectors of society. Since every organization, enterprise, and individual in society needs to make effective use of computing and information technology, the demand for competent information technology professionals far exceeds the supply, and the gap only widens as computing environments become more powerful, ubiquitous, and complex. In particular, the convergence of mobile computing, social software, digital media, and other technologies, and the collision of privacy, digital access, intellectual property, and other ethical and societal issues place IT at the center of the technological revolution that is reshaping how our society works.

RIT's BS degree program in information technology was the first such program in the world in 1992, and the only undergraduate program of its kind in the United States for at least four years thereafter. Since the program's inception, our faculty members have worked to define IT as a distinct computing discipline and establish accreditation standards and model curricula as a founding member of the Association for Computing Machinery's Special Interest Group for IT Education. In 2005, these efforts came to fruition when RIT's IT program became the first information technology program to become accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700. In short, RIT has been the leader in defining information technology as an academic discipline, and our program provides students with unrivaled depth in the field.

The role of a users' advocate is diverse and multifaceted as well. In order to make things work for people in today's sophisticated computing environments, information technologists need core competencies in four essential areas: networking and system administration, which includes the design, deployment, and security of computing infrastructure; Web and multimedia content development, which we refer to as interactive media; programming and application development, including database management systems and Web-deployed applications; and technology integration and deployment in a user community, including needs assessment, user-centered design, technology transfer, and ongoing support.

This fourth competency area, which we euphemistically refer to as the human stuff, is the defining competency for information technology professionals. To be successful users' advocates, professionals must see the world through the users' eyes and learn enough about the tasks users perform and the skills they possess to be able to select, integrate, and deploy technology that enhances users' lives. This requires skills in information gathering, user-centered design, and effective deployment in the users' environment or culture. These skills, in turn, are built on a foundation of strong communication and people skills.

The core competencies that every information technology professional must possess also provide a foundation on which to build greater depth in selected areas. Many students choose to focus on one or two technical aspects of the field to prepare for careers as specialists in a variety of market niches such as game design and development, network administration, or Web-database integration, to name a few of the many possibilities. Other students choose a broader path to prepare for general practitioner jobs, which are prevalent in virtually every enterprise in society. RIT's information technology program offers the opportunity to specialize but does not require that a student choose a specialization.

Information Technology

The program of study in information technology consists of core computing courses, followed by advanced study in two concentration areas chosen by the student and approved by his or her academic adviser. The concentrations are intended to prepare students for advanced information technology specialties. Predefined concentration areas include game design and development, website development, interactive multimedia development, network and system administration, database, learning and performance technology, and advanced application development.

In addition, students can elect to create a special topics sequence for one of their two concentrations. A special topics concentration can include a mix of upper-division information technology courses and/or courses outside the department in areas such as graphic arts, computer animation, telecommunications, or computer science.

All of the components of this program, including cooperative education, are uniquely designed to produce an individual of value to industry in the Information Age.

Cooperative education

The BS in information technology requires that students complete three quarters of cooperative education prior to graduation. Students may schedule cooperative education after completing the 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, regardless of their schedules. 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.
First Year	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
Second Year	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

Third and Fourth Years	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
	Total Quarter Credit Hours	181

* *Please see Liberal Arts General Education Requirements for more information.*
† *Please see Wellness Education Requirement for more information.*
‡ *Two three-course concentrations are required. Concentrations include 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.
First Year	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
Second Year	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
	Total Quarter Credit Hours	92

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

Game Design and Development

James Leone, Chair

www.games.rit.edu

The bachelor of science in game design and development defines a program of study that allows students to explore the entertainment technology landscape, as well as other related areas, while still pursuing a broad-based university education. The program focuses its technical roots in the computing and information sciences disciplines. Simultaneously, the program exposes students to the breadth of development processes through involvement in topics such as game design, design process, and animation.

The program is characterized by a clear focus on development but meets the industry need for developers who will be involved in the design process from the beginning, just as they are in the professional field. The degree is intended specifically for students who aspire to hold careers within the professional games industry or a related field such as simulation, edutainment, or visualization, and 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 would prepare them for graduate study in a number of computing fields and employment in more general computing professions. ABET does not accredit programs in this field.

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, and laboratory sciences. Students can further customize their experience through both general elective course work 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

Game design and development students complete three quarters of cooperative education. Co-op students have found work in the games industry and related domains, both regionally and nationally. These experiences give our students real-world experience, which gives our graduates an edge when applying for jobs after graduation.

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

Game design and development, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Seminar 4002-201	1
	Computer Science I, II, III (RAPT sections) 4003-231, 232, 233	12
	Introduction to Multimedia: The Internet and the Web 4002-320	4
	Algebra and Trigonometry 1016-204	4
	Discrete Math for Technologists I, II, 1016-204, 205	8
	College Physics I, II 1017-271, 272	8
	Liberal Arts*	12
	Wellness Education†	0
	First-Year Enrichment 1105-051, 052	2
Second Year	Interactive Digital Media 4002-330	4
	Introduction to Database and Data Modeling 4002-360	4
	Introduction to Animation I 4002-346	4
	Introduction to 3-D Computer Animation 4002-347	4
	Web Site Design and Implementation 4002-409	4
	Fundamentals of Game Design and Development I, II 4002-380, 381	8
	Data Structures and Algorithms for Game Design and Development I 4002-387	4
	Networking Essentials 4050-210	4
	Analytic Geometry 1016-228	4
	Liberal Arts*	8
Third and Fourth Years	Cooperative Education‡	Co-op
	Visual C++ for Programmers 4002-417	4
	Programming for Digital Media 4002-434	4
	HCI1: Human Factors 4002-425	4
	Data Structures and Algorithms for Game Design and Development II 4002-487	4
	Advanced Studies**	20
	Liberal Arts*	16
	General Education Electives	18
	Free Electives	12
	Total Quarter Credit Hours	*181*

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

New Media Interactive Development

James Leone, Chair
www.interactive.rit.edu

The last decade has seen unprecedented innovation in technologies for communication, computation, interactivity, and delivery of information. Two huge underlying factors—Internet connectivity and computer processing—have transformed the media landscape dramatically. New media is dynamic, personalized, and connected, and 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. The BS in new media interactive development was developed to meet this need. ABET does not accredit programs in this field.

In a field that is changing so 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, with an emphasis on independent problem solving in a constantly evolving field.

Online games, search engines, dynamic and personalized websites—new media touch nearly all of us daily. 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. Over the last few years, new media products and services have become a staple of many key areas of contemporary society: industry, education, the arts, the sciences, politics, and entertainment, to name a few. Indeed, there is virtually no area of society that does not benefit from the capabilities that new media offer. In light of such high demand, new media specialists can look forward to an employment market with extremely interesting and diverse jobs.

Program overview

RIT offers two closely related programs that together provide a unique approach to new media education: a BS degree program in new media interactive development (from the information technology department) and a BFA degree program in new media design and imaging (from the College of Imaging Arts and Sciences). This pair of programs enables students to learn and practice their respective disciplines in close collaboration with one another. Although each program has a unique emphasis, both of them share a common core of courses that introduce new media students to technical, aesthetic, and business issues relevant across a broad range of professional career paths. The curriculum of the common core includes course work in graphic design, photographic imaging, video, publishing, programming, and information technology.

Students in the new media interactive development program will complete most of their advanced course work in information technology, where they have the opportunity to pursue cutting-edge skills in interactive media and Web technologies.

As new media environments become richer and more complex, the industry has moved away from displaying "one-size-fits-all" Web pages and CD-ROMS and toward new media that must:

- reformat itself for display on computers, television sets, PDAs, and cell phones;
- reconfigure itself to the interests of the individual viewer/subscriber;
- mix broadcast media information with computer-based media;
- allow multiple users to view/work on the same material at the same time;
- create interactive entertainment spaces able to support thousands of simultaneous users;
- drive the economy of the information age with financial and product databases;
- support the computer-based, network-backed training and education programs just emerging; and
- create a new marketplace of ideas.

It is the new media interactive development student who will create and program the database-backed, networked information spaces to support the content created by his or her peers in the imaging arts disciplines.

In the senior year, new media interactive development students will rejoin those from the other new media programs to complete a two-quarter, eight-credit new media team project that will tackle real-world new media issues. This culminating experience provides an opportunity for each student to hone his or her skills in collaboration with students from different disciplines in a setting much like that found in industry.

Cooperative education

In addition to the senior project, new media interactive development students will complete three quarters of cooperative education. New media co-op students have found work in Web design, electronic commerce, human factors labs, and other related businesses both regionally and nationally. These experiences give our students real-world experience that provides an edge when they apply for jobs after graduation.

Leaders from the new media industry had considerable input in the design and structure of the program. These leaders seek talented employees who can work on interdisciplinary teams and bring with them valuable experience gained through the senior project and cooperative education experiences.

New media interactive development, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Introduction to New Media Interactive 4002-229	4
	Introduction to Multimedia: The Internet and the Web 4002-320	4
	New Media Studio Elective**	3-4
	Imaging for New Media 2083-206	4
	Elements of Graphic Design 2009-213	3
	Introduction to Programming for New Media 4002-230	4
	Programming II for New Media 4002-231	4
	Wellness Education†	0
	Algebra and Trigonometry 1016-204	4
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
Second Year	Website Design and Implementation 4002-409	4
	Design of Graphical User Interface 4002-323	4
	Java for Programmers 4002-414	4
	Networking Essentials 4050-210	4
	Introduction to Database and Data Modeling 4002-360	4
	New Media Studio Elective**	3-4
	Discrete Math for Technologists I, II, 1016-204, 205	8
	Liberal Arts*	12
	Programming III for New Media 4002-333	4
Third and Fourth Years	Cooperative Education (three quarters required after year two)	Co-op
	New Media Advanced Electives‡	28
	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 4002-560, 565	8
	Total Quarter Credit Hours	*181-183*

† Please see Wellness Education Requirement for more information.
* Please see Liberal Arts General Education Requirements for more information.
** Two of the following four courses are required: Digital Video, Introduction to Digital Animation, Typography for New Media, or a New Media Publishing elective.
‡ Seven advanced new media courses forming a track decided by the student, in consultation with his or her adviser

Medical Informatics

Nicolas A. Thireos, Program Director

www.medinfo.rit.edu

RIT's 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 heath 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 and computer science/information technology, with an emphasis on clinical and laboratory applications. The program trains students to develop computer applications for laboratory analyses, medical information systems, medical research, education, and solutions to clinical problems. Students learn to provide computing support to medical professionals and communicate effectively in a variety of health-care settings. 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

While cooperative education is not a requirement for the medical informatics degree, it is strongly encouraged. 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 who participate in co-op will alternate quarters of academic study with quarters of paid employment, starting with the summer between the second and third years. These experiences enhance all students' education and make them more valuable to prospective employers.

Optional premedical track

Medical informatics may function as a premedical program. Those medical informatics students interested in applying to medical, dental, or veterinary school after graduation follow the computer science track but 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 natmvk@it.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	Medical Informatics I 4006-310, 410	8
	Medical Informatics Seminar 4006-345	1
	Computer Science 4 4003-334	4
	Computer Organization 4003-345	4
	Database Concepts 4003-485	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 Database Architectures 4006-420	4
	Medical Application Integration 4006-430	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
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
	Network Fundamentals 4050-351	4
	Medical Terminology 1026-301	3
	Algebra for Management 1016-225	4
	Discrete Math for Technologists 1016-205, 206	8
	Liberal Arts*	4
	Freshman Seminar 4002-201	1
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	Medical Informatics I, II 4006-310, 410	8
	Medical Informatics Seminar 4006-345	1
	Information Technology Elective	4
	Computer System Fundamentals 4050-350	4
	Database and Data Modeling 4002-360	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 Database Architectures 4006-420	4
	Medical Application Integration 4006-430	4
	Fundamental Data Modeling 4002-461	4
	Information Technology Elective	4
	Anatomy and Physiology 1026-350, 360	10
	Diagnostic Medical Imaging 1026-205	2
	Liberal Arts*	12
	Free Elective	4
	Wellness Education†	0
Fourth Year	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.

Networking, Security, and Systems Administration

Luther Troell, Chair

www.nssa.rit.edu

Almost all business enterprises employ and depend on the flow of information. In today's society, nearly all information flow depends on networks. Servers within the networks act as the repositories of this information and provide it to end users when needed.

The advent of the World Wide 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 construction and maintenance
Operating system installation and configuration
Data communications and networking
Local area network (LAN) design and construction
Routing and switching
Network service installation and configuration
Server installation and configuration
Network and server security
Computer forensics
Unix and Windows operating systems
Programming and scripting

Students can choose to get a BS in applied networking and systems administration for an in-depth education in networking/systems administration, or they can matriculate in the BS degree program in information security and forensics if their choice is to specialize in the security of networks and computer systems.

Applied Networking and Systems 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.

Systems administration refers to 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 program in applied networking and systems administration is designed to teach students how to be the designers, implementers, operators, and maintainers of computing networks and networked systems (both clients and servers). Graduates of the program will be able to evaluate existing networks and computing systems, suggest improvements, monitor such systems for faults, and plan for growth. They will work in small- to large-scale companies. Any organization that uses computers and networks will need graduates from this program.

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, we focus specifically on the network or computing system. That is, the program favors depth over breadth. It is this depth that allows faculty to guide the students in their exploration of the technologies

RIT's bachelor of science degree 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. Our curriculum and the facilities in which to provide it have been evaluated and found to be exceptional. In addition, 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.

Program overview

To graduate with a BS in applied networking and system administration, students must complete 182 credit hours. Entering freshmen will earn most (if not all) of those credits at RIT. For transfer students, some credits will be transferred from prior schools attended.

The 182 credits needed to graduate are broken down as follows:
- 80 credits of networking and system administration (60 credits core, 20 credits advanced work)
- 36 credits of liberal arts
- 24 credits of math and science
- 18 credits of general education electives
- 20 credits of free electives
- 4 credits for Freshman Seminar (4050-201) and First-Year Enrichment (1105-051, 052)

The networking and system administration degree program contains required core courses and advanced track curriculum. The core includes a programming sequence, a competency course in multimedia, a competency course in 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 BS in applied networking and system administration requires students to choose five of the following courses:

4050-413 Applications of Wireless Data Networking
4050-422 System Administration II
4050-423 System Administration III
4050-517 Network Forensics and Security*
4050-519 Network Troubleshooting
4050-520 Advanced Switching in Data Communications
4050-521 Perl for System Administration
4050-522 Introduction to Network Programming
4050-523 Security of Wireless Data Networking*
4050-530 Telephony Integration
4050-550 Emerging Network Applications
4050-540 Network Design and Performance
4050-545 Advanced Routing
4050-580 Computer System Security*
4050-581 Computer System Forensics*
4050-582 Wireless Ad-Hoc/Sensor Networks

Groupings to consider include:

Information Assurance

4050-422 System Administration II
4050-523 Security of Wireless Data Networking*
4050-517 Network Forensics and Security*
4050-540 Network Design and Performance
4050-580 Computer System Security*

Network Administration

4050-517 Network Forensics and Security*
4050-519 Network Troubleshooting
4050-522 Introduction to Network Programming
4050-540 Network Design and Performance
And one of the following:
  4050-545 Advanced Routing
  4050-520 Advanced Switching in Data Communication

Systems Administration

4050-422 System Administration II
4050-423 System Administration III
4050-521 Perl for System Administration
4050-540 Network Design and Performance
4050-580 Computer System Security*

Wireless Networking

4050-413 Application of Wireless Data Networking
4050-517 Network Forensics and Security*
4050-523 Security of Wireless Data Networking*
4050-540 Network Design and Performance
And one of the following:
  4050-545 Advanced Routing
  4050-520 Advanced Switching in Data Communication

* Requires Computer Crime (0501-507), Ethics in Information Technology (4002-415), or equivalent as a prerequisite.

Cooperative education

Applied networking and system administration students will complete three quarters of cooperative education. Co-op students have found work in nearly every 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 our 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 and fourth years. Students must complete their co-op requirement prior to completing their course work.

Part-time study

The BS in applied networking and systems administration is available on a part-time basis. Courses are available during the day and in the evening to accommodate those who work, regardless of their schedules. The typical evening student requires 25 quarters to complete the BS degree. Please refer to the part-time undergraduate bulletin for more information on this option.

Applied networking and systems administration, BS degree, course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	Networking Fundamentals 4050-351	4
	OS Scripting 4050-402	4
	Introduction to Routing and Switching 4050-515	4
	System Administration I 4050-421	4
	Concepts of Wireless Networking 4050-403	4
	Introduction to Database and Data Modeling 4002-360	4
	Data Analysis 1016-319	4
	Lab Science Electives	8
	Liberal Arts*	8
Third, Fourth, and Fifth Years	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
	Total Quarter Credit Hours	*182*

* 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

Luther Troell, Chair

The scope of computer networks and the span of these systems in organizations increases 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 is designed to produce professionals who understand people and processes. In addition to possessing state-of-the-art knowledge in the preservation of information assets they will be able to serve as 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 the more general information systems or information technology programs. We accomplish this by focusing on network and computing system security and forensics. This 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 credits include:
- 80 credits in networking and system administration (64 credits core, 16 credits advanced work)
- 36 credits of liberal arts
- 24 credits of math and science
- 18 credits of general education electives
- 20 credits of free electives
- 4 credits for Freshman Seminar and First-Year Enrichment

The information security and forensics programs feature 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

Each student 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
4050-413 Applications of Wireless Networks
4050-517 Network Forensics and Security
4050-523 Security of Wireless Networks
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

Information security and forensics students will complete three quarters of cooperative education. Co-op students have the opportunity to work in a variety of businesses, from small- or medium-sized businesses to large international companies that require computer systems or computer networks. These may be computing-centric businesses (network hardware manufacturers, software services providers) to those that are users of information technology (manufacturing companies, school districts, health care). Completing a co-op gives our 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 and fourth years. Students must complete their co-op requirement prior to completing their course work.

Part-time study

The BS in information security and forensics is available on a part-time basis. Courses are available both during the day and in the evening to accommodate those who work, regardless of their schedules. The typical evening student requires 25 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.
First Year	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
	Operating System Scripting 4050-402	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
Second Year	Concepts of Wireless Networking 4050-403	4
	Client/Server Programming 4050-212	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
Third Year	Information Security Policies 4050-360	4
	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

Fourth Year	Advanced Track Courses‡	12
	General Education Electives	14
	Free Electives	8
	Cooperative Education 4050-499	Co-op
	Total Quarter Credit Hours	*182*

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

Software Engineering

J. Fernando Naveda, Chair

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. Graduates of this program receive a bachelor of science degree in software engineering.

Students learn principles, methods, and techniques for the construction of complex and evolving software systems. The program encompasses technical issues affecting software architecture, design, and implementation as well as process issues that address project management, planning, quality assurance, and product maintenance. Upon graduation, students are prepared for immediate employment and long-term professional growth in software development organizations.

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.

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

Companies and organizations that have sponsored senior projects include Nortel Networks, Northrup Grumman Security Systems, Intel Corp., Webster Financial Group, Primavera Systems, Nokia, IBM Thomas Watson Research, PaeTec Communications, Alstom Signaling Inc., Eastman Kodak Co., RIT Information and Technology Services, Harris Corporation (RF Communications Division), the Air Force Research Laboratory, Excellus Blue Cross Blue Shield, Telecom Consulting Group NE Corp. (TCN), and Videk.

The following section describes activities that are commonly performed as part of the course.

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 develop a project plan that includes scheduled, concrete milestones.

Spring quarter: Most of spring 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.

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 our 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).

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Software engineering, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	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 1 1017-311	4
	Choose one science sequence:	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
Third, Fourth and Fifth Years	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
	Total Quarter Credit Hours	*195*

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

† Please see Wellness Education Requirement for more information.

** Software engineering majors are required to take one four-credit math/science elective from the following list. 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/

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 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

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 degree programs are accredited by ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, (410) 347-7700. The college is in the process of launching a BS degree in chemical engineering that is pending state approval. 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.

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 Honors curriculum, designed to stimulate and challenge exceptional students, Honors participants have access to distinctive courses, projects, and advising within the college.

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 include both domestic (e.g., San Francisco, Seattle) and international (e.g., Milan, Munich) 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 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 science and part-time study

A number of students desire to pursue engineering degrees part time while maintaining full-time employment. In response to their needs, the College of Engineering offers the associate degree in engineering science. The mathematics, science, liberal arts, and core engineering science courses included in this program prepare graduates for transfer into the third-year level of most ABET-accredited engineering programs. Students who have been away from school for a while may want to take advantage of the Academic Support Center, which can provide advice on the appropriate math and science courses required to bring the student to the academic level associated with incoming engineering freshmen.

Engineering science graduates with appropriate engineering elective courses will be considered for acceptance as third-year students in either the mechanical or electrical engineering departments. They will generally be required to take upper-division courses during the normal day schedule. For transfer to other engineering departments, students are advised to contact the respective department head and arrange the appropriate course schedule before they complete 45 quarter credit hours of the engineering science program.

As with full-time students, part-time students seeking a bachelor's degree are required to complete the equivalent of five quarters of approved cooperative education experience. Arrangements can be made for part-time students to use approved portions of their regular employment to satisfy some or all of the co-op requirements. For further information on part-time study in engineering, please contact the college's Office of Student Services at (585) 475-7994.

Engineering science, AS degree, typical course work*

		Qtr. Cr. Hrs.
Liberal Arts	Writing 0502-227	4
Social Sciences	Two of five social sciences courses in different areas: Principles of Microeconomics 0511-211 American Politics 0513-211 Or Introduction to International Relations 0513-214 Foundations of Sociology 0515-210 Cultural Anthropology 0510-210 Introduction to Psychology 0514-210	8
Humanities	Two Humanities Courses (must be different disciplines) *History:* Modern American History 0507-301 Special Topics: American History 0507-305 Modern European History 0507-302 Special Topics: European History 0507-306 *Fine Arts:* Visual Arts 0505-213 Musical Arts 0505-214 Film Arts 0505-215 Theater Arts 0505-216 *Philosophy:* Introduction to Philosophy 0509-210 Ethics 0509-211 Critical Thinking 0509-213 Ethics in the Information Age 0509-217 *Science, Technology, and Society* Science, Technology, and Values 0508-211 Introduction to Environmental Studies 0508-212 *Literature:* Literacy and Cultural Studies 0504-210	8
Math and Science	Calculus I, II, III 1016-281, 282, 283	12
	Multivariable Calculus 1016-305	4
	Differential Equations 1016-306	4
	College Chemistry 1011-208	4
	University Physics I, II, III 1017-311, 312, 313	12
Engineering Core	Dynamics 0304-359	5
	Circuits I with Lab 0301-381	4
	Statics 0304-336	4
Engineering, Electrical Option*	Digital Systems 0301-240	4
	Advanced Programming for Engineers 0301-346	4
	Introduction to Microcomputers 0301-365	4
	Introduction to Programming Using C 4002-211	4
	Modern Physics 1017-314	4
	Engineering Mathematics 1016-328	4
Mechanical Option*	Engineering Design Graphics 0304-214	2
	Problem Solving with Computers 0304-342	3
	Mechanics of Materials 0304-347 with Lab 0304-348	4/1
	Measurement, Instrumentation, Controls 0304-280	2
	Matrices and Boundary-Value Problems 1016-318	4
	Two Science Electives (see ME list of science electives)	8
	Total Quarter Credit Hours	93

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

Engineering Exploration

The engineering exploration program is an option 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. This course provides an overview of all five 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 program, typical first-year schedule**

		Qtr. Cr. Hrs.
Fall	Calculus I 1016-281	4
	College Chemistry 1011-208	4
	Computing for Engineers 0303-302	4
	Introduction to Engineering 0302-210	1
	Liberal Arts*	8
	First-Year Enrichment 1105-051	1
Winter	Calculus II 1016-282	4
	Science Elective	4
	University Physics I 1017-311	4
	Liberal Arts*	4
	First-Year Enrichment 1105-052	1
Spring	Calculus III 1016-283	4
	Engineering class of interest	4
	University Physics II 1017-312	4
	Liberal Arts*	4
	Wellness Education†	0
	Total Quarter Credit Hours	*51*

*   *Please see Liberal Arts General Education Requirements for more information.*
†   *Please see Wellness Education Requirement for more information.*
** *For suggested quarterly schedule, consult with your academic adviser.*
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Computer Engineering

Andreas E. Savakis, Head

www.ce.rit.edu

Educational objectives

The computer engineering program has established the following educational objectives:

Career focus—Graduates are prepared to contribute to the professional workforce after establishing fundamental knowledge in computer engineering, which includes mathematical, scientific, and computing principles; modern tools; engineering analysis and design; and experiential learning.

Scope—Graduates are prepared to be effective integrators of hardware and software in the design and development of digital and computer systems and can apply these skills in their chosen careers.

Depth and graduate study—Graduates have gained further understanding of specialized elective areas such as software engineering, architectures, networking, and Very Large Scale Integrated design. Many are prepared to pursue graduate study in computer engineering or a related discipline.

Independent learning—Graduates have the foundation necessary for independent learning, which is necessary in order to continuously update their skills and allow for career renewal in a changing workplace and economy.

Professionalism—Graduates are acquainted with the practices and responsibilities required in a professional environment, including professional and ethical responsibility and awareness of socioeconomic and contemporary issues.

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 framework on which to build their academic courses. These co-op work periods alternate with academic quarters throughout the last three years of the program.

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

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.
First	Introduction to Computer Engineering 0306-200	1
Year	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
		4
Second	Assembly Language Programming 0306-250	4
Year	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
Third	Computer Organization 0306-550	4
Year	Digital Systems Design 0306-561	4
	Circuits II 0301-382	4
	Electronics for Computer Engineers 0306-460	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

Fourth Year	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
	Computer Engineering Design Projects I 0306-654	4
	Liberal Arts*	8
	Math/Science Elective	4
	Cooperative Education (2 quarters)	Co-op
Fifth Year	Computer Architecture 0306-551	4
	Computer Engineering Design Projects II 0306-657	4
	Professional Electives	8
	Free Elective	8
	Liberal Arts*	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.*

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.

Electrical Engineering

Vincent Amuso, Department Head
www.ee.rit.edu

Educational objectives

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

A strong foundation in the core electrical engineering fundamentals—The bachelor of science in electrical engineering curriculum provides all students with the fundamental knowledge and abilities necessary for specialization in all areas of electrical engineering.

A firm foundation in mathematics and the basic sciences—A firm foundation in mathematics and the basic sciences is necessary for the understanding, application, and development of engineering principles.

Knowledge of relevant technologies—The student will be well informed about current technologies important to electrical engineering as well as future technological advances.

Problem-solving and design capability—The student will develop skills for devising and evaluating solutions to both closed-end (simple solution) and open-ended (multiple solution) problems. This includes the design of components, systems, and experiments.

Creativity and enthusiasm for lifelong learning—The program will foster an environment that encourages creativity and an excitement-driven outlook among its students and faculty.

Schooling in professional attributes—Professional attributes include communication skills, the art of self-learning, teamwork, ethics, and the essentials of quality management.

Breadth of knowledge—In addition to a thorough understanding of electrical engineering, the well-rounded student must have an appreciation for other disciplines, both technical and non-technical, in order to deal with the impact of technology in a global and societal 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.

Electrical engineering, BS degree, typical course sequence**

		Qtr. Cr. Hrs.
First Year	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
Second Year	Electrical Engineering Sophomore Practicum 0301-305	1
	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
	Restricted Science Elective 0301-370 or Modern Physics I 1017-314	4
	Programming Using C 4001-211	4
	Liberal Arts*	4
	Free Elective	4
Third Year	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
Fourth Year	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	
	Liberal Arts*	8
	Cooperative Education (2 quarters)	Co-op
Fifth Year	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	191

* 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   Signal Processing

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, combined BS/MS option, typical course sequence**

		Qtr. Cr. Hrs.
First Year-Third Year†		133
Fourth Year	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
Fifth Year	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
	Total Quarter Credit Hours	*232*

* Please see Liberal Arts General Education Requirements for more information. The first through third year curriculum is identical to that in the BS program.
** 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 analog circuit design. It emphasizes the actual design and fabrication of complex analog and mixed-signal integrated circuits. Digital and analog signal processing principles are presented in a coordinated design environment.

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.

Part-time students

Part-time students must fulfill the same academic requirements for graduation as full-time students. In order to be accepted, they must have third-year status. Those who enter these programs must be employed full time in a technical position. Such work assignments satisfy the co-op requirements within the department. Students should plan to take two courses each quarter during the day.

Industrial and Systems Engineering

Jacqueline R. Mozrall, Head

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 knowledge—Produce graduates able to design, develop, optimize, implement, and manage systems that integrate people, materials, information, equipment, and energy

Immediate contributors—Produce graduates who, with at least one year of experiential education, are able to immediately contribute to industrial, service, and/or government organizations

Graduate preparation—Produce graduates who are well-prepared for graduate education

Lifelong learners—Produce graduates who value professional development through lifelong learning

Broad knowledge—Produce graduates with a broad base of knowledge to draw upon in providing engineering solutions within the appropriate global, societal, and organizational context

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 high-quality products and services are delivered in a cost-effective manner.

Industrial engineering is ideal for those who enjoy both technology and working with people. Industrial engineers frequently spend as much time interacting with other engineers and

product users as they do at their desks and computers. Typical computer work involves developing applied simulations of processes to evaluate overall system efficiency.

A degree in industrial engineering offers 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.

Accelerated dual degree options
The ISE department offers accelerated dual degree options, where select students may complete a BS and an MS or ME in industrial engineering in five years plus an additional quarter. 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 application (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).

Along with ample computing facilities, these labs offer an extensive library of software to support industrial engineering project work, 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, material selection software); optimization and systems simulation software (e.g., ProModel, Arena); and lifecycle assessment and costing tools.

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 gradation, 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.
First Year	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†	
Second Year	Mechanics I 0304-331	3
	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†	
Third Year	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
Fourth Year	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
Fifth Year	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
	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 Web page (www.rit.edu/kgcoe/ise).

Professional electives (partial list)

0303-691 Fundamentals of Sustainable Design
0303-726 Contemporary Production Systems
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/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

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 dif-fractometer, atomic force microscope, dynamic system simulators, a spectrum analyzer, and a well-equipped machine shop.

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

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. Students then complete a sequence of four technical elective courses in the areas of Aerodynamics (0304-575) in place of Transport Phenomena (0304-550), 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 fourth 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 chosen 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 option

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-oriented 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-oriented 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 option 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.
First Year	First-Year Enrichment 0304-051, 052	2
	Students will be enrolled in one of the calculus sequences below:	
	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
Second Year	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

Third Year	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
Fourth Year	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
Fifth Year	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
	Total Quarter Credit Hours	**195**

* *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.*

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
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*
0304-673   Aeromechanics Lab**
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.
**This course replaces 0304-551 Thermo Fluids Lab II 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

Microelectronic Engineering

Santosh K. Kurinec, Head

www.rit.edu/kgcoe/ue

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, and the college continues to provide highly educated and skilled engineers current in knowledge for the semiconductor industry.

Educational objectives
In order to meet the needs of all constituents (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, including 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 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 constitutes 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 devices, 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 extremely vital to manufacturing. A comprehensive knowledge of statistics is required to manipulate data and process control. As the devices are shrinking in size, approaching 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 ASML deep UV, Canon i-line, 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 devices, and microsystems.

With the worldwide semiconductor industry growing at an astounding pace, RIT graduates are a valuable resource to the industry. This program offers students an unparalleled opportunity to prepare for professional challenges and success in one of the leading modern areas of engineering. Faculty committed to quality engineering education, state-of-the-art laboratories, strong industrial support, co-op opportunities with national companies, and smaller class sizes make this one of the most value-added programs in the nation.

Microelectronic engineering, BS degree, typical course sequence **

		Qtr. Cr. Hrs.
First Year	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 0301-240	4
	Liberal Arts*	12
	Wellness Education†	0
	First-Year Enrichment 1105-051, 052	2
Second Year	Multivariable Calculus 1016-305	4
	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
Third Year	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
Fourth Year	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)	Co-op
Fifth Year	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)	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.

Two alternative cooperative education plans for the microelectronic 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

A cross-disciplinary dual degree BS/MS 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.
First Year	Same as BS (Microelectronic Engineering)	52
Second Year	Same as BS (Microelectronic Engineering)	49
Third Year	Same as BS (Microelectronic Engineering)	32
Fourth Year	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
Fifth Year	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
	Total Quarter Credit Hours	*225*

* *Please see Liberal Arts General Education Requirements for more information.*
** *For a suggested quarterly schedule, please consult with an academic adviser.*

College of Imaging Arts and Sciences

Joan Stone, 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 art education 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, and new media design and imaging
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

Admission

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 his or her choice of program.

The schools of Photographic Arts and Sciences, Film and Animation, and Print Media do not require a portfolio for acceptance into their undergraduate programs. However, a photography portfolio is required if students are requesting the transfer of photography credits to satisfy program requirements.

Visits to the campus and the college 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 admissions interview or to visit the campus. Please call (585) 475-6631, or visit our website at http://admissions.rit.edu.

Guidelines for portfolio submission:
1. Portfolios for 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 slides or digital files of a student's best artwork, submitted as 35mm slides or as a work 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.

2. All slides, digital files and documents submitted should be clearly labeled. Each slide should be numbered in order in the slide page. 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 slide page or 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 the student's full name, address, phone number, and e-mail address (if available) are included on the list.

4. Portfolios will be evaluated on the basis of drawing and design ability, original ideas, and craftsmanship. The clarity of the slide or digital images is of utmost importance.

5. Medical illustration applicants should include at least six samples of natural forms such as shells, figures, or animals rendered in a single medium.

6. School for American Crafts applicants are encouraged to include works done 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.

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 will always assist in transfer credit evaluation.

8. Slide portfolios can be returned only if proper postage is included with the application. Please include a padded, self-addressed, stamped envelope. 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 loss or damage to 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 of getting the portfolio accepted on site. 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 or a guide to shooting slides for your portfolio, please visit our website at http://futurestudent.rit.edu/ugrad/apply.cfm.

Send your portfolio and completed application to:
Rochester Institute of Technology
Office of Undergraduate Admissions
60 Lomb Memorial Drive
Rochester, NY 14623-5604
(585) 475-6631

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, art, design, and crafts.

The college houses a number of photographic archives and a comprehensive art library as well as instructional films and other aids that students may utilize for reference. Exhibitions regularly feature the work of contemporary painters, designers, photographers, illustrators, and graphic artists as well as faculty and student work. Opening receptions provide students with the opportunity to meet and learn from guest artists and photographers.

Major resources available to students include:
  • Thirty studios
  • More than 100 fully ventilated darkrooms
  • Extensive 16mm film and digital video field production equipment
  • Forty editing stations
  • Studio and sound facilities (two- and three-dimensional)
  • More than $50 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; the Amico Library and Artstop of online image collections; 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, which contains more than 20,000 volumes of rare books illustrating fine printing as well as other materials detailing the history of printing, book design and illustration, papermaking, binding and other aspects of the graphic arts

- Bevier Gallery
- School of Photographic Arts and Sciences (SPAS) Gallery
- Gallery r, the university's off-campus, student-managed contemporary art gallery, administered by the School of Art, which actively educates and encourages viewers to examine the relevance of art and cultural exposure in their own lives. Gallery r is an educational laboratory that presents art to the widest possible audience, maintaining a selected collection of student and alumni artwork for on-site consignment and sales.

Cooperative education

Students in the college may participate in cooperative education experiences or internships. As part of the student's career exploration, this work experience provides 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, or Photographic Arts and Sciences, many students choose to co-op during the summer quarter as a way to gain valuable experience.

While students are responsible for finding their co-op positions, the Office of Cooperative Education and Career Services offers services and resources to assist them. The office offers one-on-one job search advisement and a Web-based employment database. Co-op allows students the opportunity to evaluate career goals before making employment decisions, develop insight into their chosen fields, gain professional experience to put on their résumés, and increase their potential for placement and rapid career advancement after graduation.

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 accredit the BFA and MFA programs in the schools of Art, Design, American Crafts, and Photographic Arts and Sciences. 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, slides, 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 mission of the School of Art is to educate 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. To this end, 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 (medical illustration, illustration, and fine arts studio) programs are as follows:

Requirments	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
Total Quarter Credit Hours	*183–184*

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*
Graphic Design
Illustration (all sophomore-level courses)
Graphic Visualization
Industrial Design
Interior Design
Fine Arts Studio (all sophomore-level courses)
Environmental Design
Ceramics
Glass
Metals
Textiles
Woodworking

Introduction to Filmmaking
Still Photography I, II, III
Imaging Technology

Art History (select three)

2039-300 History of Design
2039-306, 307, 308 Architecture, Interiors, and Furniture
    Design History I, II, 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.

Medical illustration, fine arts studio, BFA degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	**Foundation Studies:**	
	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
	2-D Design 2013-231, 232, 233	9
	3-D Design 2013-241, 242, 243	9
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	Survey of Western Art and Architecture 2039-225, 226, 227	9
	Liberal Arts*	12
	Wellness Education†	0
	Illustration majors:	
	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
	Fine Arts Studio majors:	
	Introduction to Fine Arts Drawing 2021-xxx	3
	Introduction to Painting 2021-xxx	3
	Intermediate Painting 2021-xxx	3
	Figure in Motion 2021-xxx	3
	Introduction to Non-Toxic Printmaking 2021-xxx	3
	Intermediate Non-Toxic Printmaking 2021-xxx	3
	Introduction to Sculptural Forms 2021-xxx	3
	Intermediate Sculpture 2021-xxx	3
	Studio elective	3
	Medical Illustration majors:	
	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	
	Head, Hands, Facial Expressions 2019-306	
	Zoological and Botanical Illustration 2019-323	
	Illustration Techniques I 2019-345	
	Figure in Motion 2021-xxx	
Third Year	Art History Elective	9
	Studio electives	6
	Open elective	3-4
	Liberal Arts*	12
	Illustration majors:	
	Junior-level courses from major concentration	12
	Program electives	6
	Fine Arts Studio majors:	
	Junior-level courses from Fine Arts Studio I	9
	Sculpture Ideation and Series 2021-xxx	3
	Figure Studies course	3
	Medical Illustration majors:	
	Human Gross Anatomy 2020-431, 432	8
	Junior-level courses from major concentration	18
Fourth Year	Studio elective	3
	Open electives	18-24
	Illustration majors:	
	Illustration Marketing and Business 2019-513	3
	Portfolio Preparation 2019-563	3
	Senior-level courses from major concentration	15
	Fine Arts Studio majors:	
	Business Practices for the Fine Arts 2021-572	3
	Senior-level courses from Fine Arts Studio II	15
	Medical Illustration majors:	
	Six senior-level courses from major concentration	18
	Total Quarter Credit Hours	*182-186*

* 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 mission of the School of Design is to provide 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, and new media design and imaging. 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.

Transfer admission

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
Total Quarter Credit Hours	*182*

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
Total Quarter Credit Hours	*180*

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
Total Quarter Credit Hours	*183*

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
Total Quarter Credit Hours	*182*

* 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.
First Year (Foundation Studies)	Foundation Studies:	
	Freshman Elective	2
	Vector Imaging 2013-216	2
	Raster Imaging 2013-211	2
	Creative Sources 2013-205	1
	Drawing 2013-211, 212, 213	9
	2-D Design 2013-231, 232	6
	3-D Design 2013-241, 242, 243	9
	Elements of Graphic Design 2010-301	
	Design Survey 2015-222	2
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	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
Third Year	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
Fourth Year	Open Electives	18-24
	Majors must take an additional eight senior-level courses from the list below:	
	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
Total Quarter Credit Hours		*184*

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
** Please refer to the list of art history electives.

Interior design, BFA degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Foundation Studies:	
	Freshman Electives	2
	Vector Imaging 2013-216	2
	Raster Imaging 2013-211	2
	Creative Sources 2013-205	1
	Drawing 2013-211, 212, 213	9
	2-D Design 2013-231, 232, 233	9
	3-D Design 2013-241, 242, 243	9
	Design Survey 2015-222	2
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	Survey of Western Art and Architecture 2039-225, 226, 227	9
	Majors must take each of the following courses to complete the sophomore year (prerequisite: completion of Foundation Studies):	
	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
Third Year	History of Architecture and Furniture 2039-306, 307, 308	9
	Majors must take each of these courses in sequence to complete junior year in interior design (pre-requisite: completion of sophomore year):#	
	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
Fourth Year	*Majors must take these courses to complete senior year in interior design (prerequisite: completion of junior year):#*	
	Multipurpose/Multistory Design 2015-504	4
	Building Codes and Regulations 2015-505	2
	Environmental Control Application 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
Total Quarter Credit Hours		*185*

* 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.

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. This program is accredited by the Foundation for Interior Design Education Research.

The mission of the interior design program is to educate students to be designers who contribute to their professions, communicate effectively within their discipline, have a lifelong attitude of inquiry, and make a positive impact on society. To this end, we promote an innovative educational community that balances expression, imaginative problem solving, aesthetic understanding, professional responsibility, and creativity.

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.
First Year	Foundation Studies:	
	Freshman Electives	2
	Vector Imaging 2010-216	2
	Raster Imaging 2010-211	2
	Creative Sources 2013-205	1
	Drawing 2013-211, 212, 213	9
	2-D Design 2013-231, 232, 233	9
	3-D Design 2013-241, 242, 243	9
	Design Survey 2015-222	2
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year‡	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
Third Year	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
Fourth Year	Professional Practice 2035-510	3
	Career Planning 2035-513	3
	Package Design 2035-527	3
	Choose one of the following:	
	Design Collaborative 2035-506	3
	Internship 2035-498	3
	Choose one of the following:	
	Furniture Design 2035-508	3
	Advanced Product Design 2035-512	3
	Toy Design 2035-522	3
	Open Electives	18-24
	Total Quarter Credit Hours	**185**

*   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, BFA degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Drawing 2013-211, 212	6
	2-D Design 2013-231, 232	6
	New Media Perspectives 2009-201	3
	Elements of Graphic Design for New Media 2009-213	3
	Typography 2009-311	3
	Time-Based Imaging 2009-411	4
	Digital Video for Multimedia 2065-217	4
	Imaging for New Media 2083-206	4
	Introduction to Multimedia 4002-320	4
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	Survey of Western Art and Architecture 2039-225, 226, 227	9
	3-D Form and Space 2009-212	3
	Information Design for New Media 2009-312	3
	Introduction to Computer Imaging 2009-313	3
	Design of Graphical User Interface 2009-323	4
	Introduction to Digital Animation 2009-328	4
	Website Design and Implementation 4002-409	4
	Introduction to Programming for New Media 4002-230	4
	Programming II for New Media 4002-231	4
	Studio Elective	3
	Liberal Arts*	12
	Wellness Education†	0
Third Year	Art History Electives**	9
	Advanced Design for Networking 2009-401	3
	Emerging Multimedia Design and Imaging Tools 2009-402	3
	Dynamic Information Design 2009-403	3
	Dynamic Typography 2009-412	3
	Advanced 3-D Techniques 2009-413	3
	New Media Elective	3
	Open Elective	3-7
	Liberal Arts*	12
Fourth Year	Dynamic Persuasion 2009-501	3
	Choose two of the following:	
	Virtual Entertainment 2009-502	3
	Experimental New Media 2009-522	3
	Studio Elective	3
	QTVR and Multimedia Design 2009-511	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
	Total Quarter Credit Hours	**182**

*   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.

New Media Design and Imaging

This bachelor of fine arts degree 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. 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, 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 CD-ROM, DVD, and the Web. This program shares courses with two other BS programs: new media publishing, through the School of Print Media, and the new media option in information technology, through the B. Thomas Golisano College of Computing and Information Sciences. This is an exciting and dynamic interdisciplinary curriculum in step with cutting-edge technology and ready to grow with it.

School for American Crafts

Julia Galloway, 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.

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

**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.

Programs of study

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:

Requirments	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
Total Quarter Credit Hours	182–185

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

† Please see Wellness Education Requirement for more information

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

Ceramics, BFA degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Elective	6
	Creative Sources 2013-205, 206, 207	3
	Drawing 2013-211, 212, 213	9
	2-D Design 2013-231, 232, 233	9
	3-D Design 2013-241, 242, 243	9
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year‡	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
Third Year	Materials and Processes Ceramics, Junior 2040-401, 402, 403	18
	Art History**	9
	Open Electives	9
	Liberal Arts*	12
Fourth Year	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
	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.

Glass, BFA degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Elective	6
	Creative Sources 2013-205, 206, 207	3
	Drawing 2013-211, 212, 213	9
	2-D Design 2013-231, 232, 233	9
	3-D Design 2013-241, 242, 243	9
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year‡	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
Third Year	Materials and Processes Ceramics, Junior 2040-401, 402, 403	18
	Art History Electives**	9
	Open Electives	9-12
	Liberal Arts*	12
Fourth Year	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
	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.

Metals, BFA degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Elective	6
	Creative Sources 2013-205, 206, 207	3
	Drawing 2013-211, 212, 213	9
	2-D Design 2013-231, 232, 233	9
	3-D Design 2013-241, 242, 243	9
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year‡	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
Third Year	Materials and Processes Metals, Junior 2042-401, 402, 403	18
	Art History Electives**	9
	Open Electives	9
	Liberal Arts*	12
Fourth Year	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
	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, BFA degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Elective	6
	Creative Sources 2013-205, 206, 207	3
	Drawing 2013-211, 212, 213	9
	2-D Design 2013-231, 232, 233	9
	3-D Design 2013-241, 242, 243	9
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year‡	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
Third Year	Materials and Processes Wood, Junior 2044-401, 402, 403	18
	Architecture, Interior Furniture Design History 2039-306, 307, 308	9
	Open Electives	9
	Liberal Arts*	12
Fourth Year	Materials and Processes Wood, Senior 2044-501, 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
	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.
First Year	Creative Sources 2013-205, 206, 207	3
	Drawing 2013-211, 212, 213	9
	3-D 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 1105-051, 052	2
	Wellness Education†	0
Second Year	2-D Design 2013-231, 232, 233	9
	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
	Total Quarter Credit Hours	***93***

† 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 over-riding 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 2008 include new special topics courses in art gallery/museum studies and design 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
Choose one of the following:	2
Introduction to Painting 2012-286	
Painting 2012-288	
Watercolor 2012-293	
Choose one of the following:	2
Introduction to Non-toxic Printmaking 2012-296	
Printmaking Workshop 2012-396	
Relief Printing 2012-xxx	
Introduction to Screen Printing 2012-xxx	
Choose one of the following:	2
Introduction to Sculpture	
Introduction to Figure Sculpture 2012-xxx	
Found Object Sculpture 2012-xxx	
Mixed Media Rendering Techniques I	
Mixed Media Rendering Techniques II 2012-267	
Electives (with adviser's approval)	18
Diploma Total	*48*

* Core requirements are a prerequisite for all diploma programs.

School of Film and Animation

Malcolm Spaull, 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 for all graduates to be able to produce, creatively and practically, their own independent work or fulfill any production responsibility 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. The curriculum also recognizes the growing interrelationship between the technologies of film, video, animation, and computers.

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.

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/~932www/grad_bulletin/.

Summer session

The School of Film and Animation offers a limited selection of courses during the summer quarter. These range from beginning courses to those requiring a substantial background. For information on summer courses, please e-mail the school: sofa@rit.edu.

Memberships

The school maintains memberships in a number of professional organizations: Animation World Network, College Art Association, Rochester Audio Visual Association, Society of Motion Picture and Television Engineers, University Film and Video Association, Siggraph, and BEA. The school also is a certified Apple Training Center for Professional Applications.

Transfer admission

Transfer credits from accredited institutions are 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.
First Year	Production I, II, III 2065-201, 202, 203	12
	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 1105-051, 052	2
	Wellness Education†	0
Second Year	Post-production Processes 2065-344	4
	Liberal Arts*	12
	Wellness Education†	0
	Production Emphasis:	
	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
	Animation Emphasis:	
	Animation Pre-production 2065-352	4
	2-D Computer Animation 2065-427	4
	Introduction to 3-D Modeling Animation 2065-457	4
	Choose one of the following:	4
	Animation Production Workshop 2065-333	4
	Experimental Animation Workshop 2065-447	4
	Foundation Drawing 2013-211, 212	6
	Choose one of the following:	
	Foundation Drawing 2013-213	3
	2-D Design 2013-231	3
	3-D Design 2013-241	3
	Film/Animation History and Aesthetics	6-8
	Film/Animation Elective	3-4

		Qtr. Cr. Hrs.
Third Year	Senior Project Seminar 2065-413	1
	Open Electives	8
	Liberal Arts*	12
	Production Emphasis:	
	Choose one of the following:	
	Writing the Short Film 2065-387	4
	Dramatic Structure for Film/TV 2065-376	4
	Production Workshop: Documentary/Experimental/Fiction	8
	or	
	Writing the Short Film 2065-387	
	Film/Animation History and Aesthetics	6-8
	Film/Animation Elective	8
	Animation Emphasis:	
	Choose one of the following:	4
	Introduction to 3-D Computer Animation I 2065-361	
	3-D Computer Animation II 2065-xxx	
	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
Fourth Year	Open Elective	4
	Liberal Arts*	9-12
	Production Emphasis and Animation Emphasis:	
	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
	Total Quarter Credit Hours	*184-195*

* 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.
First Year	Project-Based Calculus I, II, III 1016-281, 282, 283	12
	University Physics I, II 1017-311, 312	8
	Production I, II 2065-201, 202	8
	Film Language 2065-222	4
	Film/Video Materials and Technology, 2065-231	4
	Liberal Arts*	8
	Wellness Education†	0
	First-Year Enrichment 1105-051, 052	2
Second Year	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 2065-331	4
	Post-production Processes 2065-344	4
	Sound Recording 2065-452	3
	Liberal Arts*	12
	Wellness Education†	0
Third Year	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 3-D Computer Animation 2065-361	4
	Image Capture and Production Technology	4
	Special Effects and Digital Post	4
	Film Projection and Digital Cinema	4
	Film/Animation History and Aesthetics	3
	Free Elective	4
	Liberal Arts*	8
Fourth Year	Senior Project 1, 2, 3 2065-507, 508, 509	12
	Film/Animation Electives	9-12
	Film/Animation History and Aesthetics	3
	Free Electives	12
	Liberal Arts*	8
	Total Quarter Credit Hours	*185-188*

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

School of Photographic Arts and Sciences

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 photographic sciences emphasize the principles of imaging through courses investigating the tools and processes used to make images that are pictorial-, data-, and information-based. All first-year BFA and BS program students are required to have their own handheld small- or medium-format digital camera and a professional light meter.

Students have the opportunity to supplement their course work with participation in internships, 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/~932www/grad_bulletin/.

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: American Management Association, American Society of Training and Development, Photo Marketing Association International, Photo Imaging Educators Association, Association of Professional Color Laboratories, College Art Association, Bio Communications Association, National Microfilm 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 through 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 studying 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.

Periods of co-op employment are 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 enhances a student's resume and marketability for employment.

Transfer admission
Transfer credits from accredited institutions are evaluated on a course-by-course basis. Transfer credits for photography, art studio, and art history courses are 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. (Portfolio guidelines are available in this bulletin and from the Office of Undergraduate Admissions.)

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 make up Materials and Processes of Photography, and History and Aesthetics of Photography. 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. A list of the requirements for submission of the portfolio may be obtained from the Office of Undergraduate Admissions at www.rit.edu/admissions.html.

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 communications 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, and also take biology and general science courses. Included in these classes are topics such as close-up and high-magnification photography, studio lighting, ethics, ophthalmic photography, and imaging technologies.

By the end of their second year, students will have knowledge of a wide variety of career options through the program's interactive lecture series featuring professional biomedical and new-media experts. This knowledge will help students identify and secure a summer co-op position. 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.

In the third and fourth years the curriculum becomes 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.

Since 1968, most of the program's nearly 500 graduates have been actively recruited by various visual communication companies. Many of these 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.
First Year	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 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education (summer)	Co-op
Second Year	Biomedical Photography II 2061-xxx	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
Third Year	Digital Media in Biomedical Photography 2061-316, 318	8
	Web Design Using Photo 2061-361	4
	Advanced Photography in Biomedical Communication 2061-403	4
	Open Electives	8
	Math or Science#	8
	General Education	4
	Liberal Arts*	12
Fourth Year	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
	Total Quarter Credit Hours	**191**

* 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 Optics (2076-303), and Chemistry and Color Measurement (2076-313). Electronic imaging and computing are emphasized from the first year on in courses such as Systems Design (2076-401) and Digital Image Processing I (1051-361).

Third- and fourth-year students can develop expertise in professional or technical fields by selecting a concentration of at least six open advanced electives, including 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.

At least two cooperative education placements (normally 10 weeks each) are required before graduation.

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 imaging/photographic technicians, technologists, and engineers; 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.
First Year	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 1105-051, 052	2
	Wellness Education†	0

Second Year	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
Third Year	Color Management for Photographers 2076-412	4
	Imaging Workflows 2076-413	4
	Digital Image Processing 2076-491	4
	Technical Writing 0502-444	4
	Choose one of the following:	
	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
Fourth Year	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
	Total Quarter Credit Hours	191

* 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 only be selected 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.
First Year	Photo Arts 1, 2, 3 2067-xxx	15
	Survey of Western Art and Architecture 2039-225, 226, 227	9
	Materials and Process of Photography 2076-211, 212, 213	9
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	Photo Arts 4, 5, 6 2067-xxx	15
	History and Aesthetics of Photography 2060-301, 302, 303	9
	Drawing 2013-211	3
	2-D Design 2013-231, 232	6
	Career Seminar 2060-xxx	1
	Liberal Arts*	12
	Wellness Education†	0
Third Year	Advertising Photography 2067-411, 412	10
	Advertising Core‡	5
	Minor or CIAS Electives§	8
	CIAS/Photo Electives	5-11
	Business Elective	4
	Liberal Arts*	12
Fourth Year	Advertising Core‡	10
	Portfolio Development 2067-473	5
	Business Elective	4
	CIAS/Photo Elective#	4-5
	Minor or CIAS Electives#§	12
	Open Electives¶	12-15
	Total Quarter Credit Hours	184

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
‡ Advertising core, minimum of 15 credits required
§ RIT-approved minor and/or CIAS elective, minimum 20 credits required
# Photo electives, minimum of 13 credits required in programs 2060, 2061, 2067, or 2076
¶ Open electives, minimum of 12 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 not to train students for a specific job in photography but rather to provide each individual with a rich potential for 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.

Transfer admission

College students who wish to transfer to the program can do so no matter what academic field they are involved in, but more rapid advancement to the degree is facilitated if they are studying photography or related arts areas such as painting, graphic design, communication arts, multimedia, film, or art history.

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

		Qtr. Cr. Hrs.
First Year	Photo Arts 1, 2, 3 2067-xxx	15
	Survey of Western Art and Architecture 2039-225, 226, 227	9
	Materials and Process of Photography 2076-211, 212, 213	9
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0

Second Year	Photo Arts 4, 5, 6 2067-xxx	15
	History and Aesthetics of Photography 2060-301, 302, 303	9
	Drawing 2013-211	3
	2-D Design 2013-231, 232	6
	Career Seminar 2060-xxx	1
	Liberal Arts*	12
	Wellness Education†	0
Third Year	Photography as a Fine Art I, II, III 2060-401, 402, 403	12
	Contemporary Issues 2060-411, 413	8
	Modern Art History Elective	3
	Art History/Critical Study/Open Elective	3-4
	CIAS Elective	3-4
	Minor or CIAS Elective§	3-5
	Liberal Arts*	12
Fourth Year	Photography as a Fine Art II 2060-501, 502, 503	12
	Art History/Critical Study Elective	3-4
	Art History/CIAS Elective	3
	Minor or CIAS Electives§	12-16
	Open Electives	9-12
	Total Quarter Credit Hours	*181*

*   Please see Liberal Arts General Education Requirements for more information.
†   Please see Wellness Education Requirement for more information.
§   RIT-approved minor and/or CIAS elective, minimum 28 credits required.

Photojournalism

Douglas Ford Rea, 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 of our 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.
First Year	Photo Arts 1, 2, 3 2067-xxx	15
	Survey of Western Art and Architecture 2039-225, 226, 227	9
	Materials and Process of Photography 2076-211, 212, 213	9
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	Photo Arts 4, 5, 6 2067-xxx	15
	History and Aesthetics of Photography 2060-301, 302, 303	9
	Drawing 2013-211	3
	2-D Design 2013-231, 232	6
	Career Seminar 2060-xxx	1
	Liberal Arts*	12
	Wellness Education†	0
Third Year	Photojournalism I 2067-401, 402, 403	15
	Photojournalism Core‡	4-5
	Photojournalism Ethics 2067-xxx	3
	Professional Writing for Photojournalism 2067-xxx	4
	Fundamental Sound Recording 2061-xxx	3
	Minor or CIAS Electives§	8
	Liberal Arts*	12
Fourth Year	Photojournalism II 2067-xxx	15
	Photojournalism Core‡	8-10
	Minor or CIAS Electives§	12
	Open Electives#	12-15
	Total Quarter Credit Hours	*189*

*   Please see Liberal Arts General Education Requirements for more information.
†   Please see Wellness Education Requirement for more information.
‡   Photojournalism core, minimum of 12 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 are searching 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 or print media, if not both. 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 the 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.
First Year	Photo Arts 1, 2, 3 2067-xxx	15
	Survey of Western Art and Architecture 2039-225, 226, 227	9
	Materials and Process of Photography 2076-211, 212, 213	9
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	Photo Arts 4, 5, 6 2067-xxx	15
	History and Aesthetics of Photography 2060-301, 302, 303	9
	Drawing 2013-211	3
	2-D Design 2013-231, 232	6
	Career Seminar 2060-xxx	1
	Liberal Arts*	12
	Wellness Education†	0
Third Year	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
Fourth Year	Visual Media Capstone Project 2067-512	4
	Visual Media Focus or Elective§	4
	Minor or CIAS Electives¶	10
	Photo Electives‡	16
	Open Electives#	12
	Total Quarter Credit Hours	*184*

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

The number of successful graduates from the School of Print Media testifies to the value of its new media program. The school enjoys substantial support from alumni who contribute scholarships to deserving students in need. Students interested in attending the School of Print Media should discuss financial questions with an expert from the Office of Undergraduate Admissions or the Office of Financial Aid and Scholarships.

The Education Council of the Graphic Arts Industry also offers scholarships. Applications should be submitted by high school students early in their senior year. If information about these scholarships is not available through the high school guidance office, students may write to:

National Scholarship Trust Fund
200 Deer Run Rd.
Sewickly, PA 15143

In addition to scholarships, students frequently find part-time employment on campus. The school employs students as laboratory assistants. These positions are filled on the basis of merit, but many are restricted to students needing financial aid. Also, part-time work may be available in the Printing Applications Lab.

Cooperative education

RIT's cooperative education program is a valuable requirement of the school's program. Co-op enhances a student's education by complementing formal classroom learning with practical work experience. The Office of Cooperative Education and Career Services helps students identify 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 credits

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 admissions 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 enables content to be created, stored, repurposed across multiple output media, and shared with one person or 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 3D computer animation. 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.
First Year	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 1105-051, 052	2
Second Year	Professional and Technical Writing 2082-303**	4
	Digital Asset Management 2082-337	3
	Web Page Production 2083-216	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
Third Year	Media Business Basics 2083-416	4
	SPM Concentration	9-12
	Liberal Arts*	16
	Open Elective	4
	General Education	12
	Cooperative Education	0
Fourth Year	New Media Team Project 2083-542	4
	General Education	16
	Professional Elective	8
	Open Elective	16
	Total Quarter Credit Hours	**182**

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
** Students must take the Writing Competency Test if they earn less than a grade of "B" in this class.
‡ School of Print Media students are required to complete two approved laboratory science courses.
  The following courses will meet this requirement:
  Biology 1004-211 and 1004-231; 1004-212 and 1004-232
  Chemistry 1011-211 and 1011-205; 1011-212 and 1011-206 or 1011-215 and 1011-205; 1011-216 and 1011-206
  Physics 1017-211 and 1017-271; 1017-212 and 1017-272 or 1017-311 and 1017-371 or 375; 1016-272 and
  1016-273; 1017-202
  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 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/

The College of Liberal Arts serves RIT in three ways. First, the college offers several undergraduate and graduate degree programs. Second, the college provides the required curriculum in general education for all candidates of baccalaureate and associate degrees. And finally, the college provides 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 the requirement that students must choose to pursue either a minor or a concentration of advanced course work from a number of disciplinary and interdisciplinary options. 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;
- 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;
- knowledge and critical understanding of the responsibilities and rights of living in a participatory democracy;
- understanding of human development and behavior;
- 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 value 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, professional and technical communication, psychology, public policy, and urban and community studies. The college also offers a one-year RIT Exploration program for students who are undecided about their choice of major at RIT.

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
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 is 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: Academic advisers are available to students in all of the college's programs. These faculty members help students formulate career goals and offer support in dealing with registration and scheduling. In addition, the administrative staff of the college can provide referrals to other support areas within RIT.

Liberal arts general education advising: The advising staff in the Office of Student Services within the College of Liberal Arts 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 quarter 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 of Liberal Arts 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

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 employment projection has never been better as the number of professional positions in public relations and advertising is expected to increase 30 percent by 2010 (U.S. Bureau of Labor Statistics).

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, and no one is better prepared to succeed than graduates from our program. RIT's program 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 department of communication in the College of Liberal Arts 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 advertising and public relations 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 and draw praise from students and faculty alike.

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.
First Year	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

Second Year	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
Third Year	Theories of Communication 0535-445	4
	Campaign Management and Planning 0535-463	4
	Professional Core	4
	General Education Electives	8
	Liberal Arts*	4
	Mathematics and Science Requirement**	8
	University-wide Electives	8
	Cooperative Education (two quarters)	0
Fourth Year	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
	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

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

The 15 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.

Transfer admission

Many students transfer into the advertising and public relations program from other colleges and universities and from a wide variety of programs, including business, science, computer science, and literature. Most who transfer with associate degrees can complete the advertising and public relations degree in two years. Transfer credit is evaluated course by course and is assigned where it is most appropriate. Students also can transfer into advertising and public relations from within RIT; many have changed majors and found a new home in the department of communication.

Careers

Upon graduation, advertising and public relations 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 a master of science degree in communication and media technologies.

Accelerated dual degree option

Students may be interested in earning a master of business administration at RIT in addition to the BS degree in advertising and public relations. The department has an agreement with the E. Philip Saunders College of Business that allows students to earn a BS 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

The bachelor of science degree program 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 concentrations 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. The Rochester Police Department, the Monroe County Sheriff's Department, and suburban departments throughout the area employ a substantial number of our graduates. 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. 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 noninstitutional 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 designated 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
0501-409	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
0501-446	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
0501-409	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: 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.
First Year	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
Second Year	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
Third Year	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
Fourth Year	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
	Total Quarter Credit Hours	**180**

*   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

The bachelor of science degree program 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 would 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 200 hours of internship in cultural institutions before they graduate. This experience gives them the opportunity to apply what they've learned in the classroom in 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 people, like our graduates, 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
0112-330 Business Programming
0112-370 Systems Analysis and Design
0112-315 Business Information Systems and Process
0112-340 Database Management Systems
0112-380 Network 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.
First Year	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
Second Year	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
Third Year	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

		Qtr. Cr. Hrs.
Fourth Year	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
	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.
First Year	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
Second Year	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
Third Year	Drawing I, II, III 2013-211, 212, 213	9
	Liberal Arts*	8
	General Education Electives	8
	Institute Free Elective	17
Fourth Year	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 cultural resource studies 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. All have been published within their areas of expertise.

Economics

Michael J. Vernarelli, Department Chairperson

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.

The distinguishing feature of RIT's economics program is the curriculum. We prepare 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.

Curriculum

Students take rigorous and challenging required courses 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.

Opportunities for graduates

Graduates with a BS degree in economics are prepared for entry-level positions in management and quantitative analysis as well as graduate study in economics, business, or law. Students can take advantage of the 4+1 MBA program in the E. Philip Saunders College of Business and the 4+1 program in public policy in the College of Liberal Arts. Students who follow one of these accelerated dual degree programs will receive a bachelor's degree in economics and a master's degree in either public policy or business administration in five years.

Economics, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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

Year	Course	Qtr. Cr. Hrs.
Second Year	Monetary Analysis and Policy 0511-452	4
	Applied Econometrics 0511-457	4
	Economic Forecasting 0511-458	4
	Data Analysis 1016-319	4
	Financial and Management Accounting 0101-301, 302	8
	Liberal Arts*	
	General Education Electives	12
	Laboratory Science	8
	Wellness Education†	0
Third Year	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
Fourth Year	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
	Total Quarter Credit Hours	**180**

* *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

The bachelor of science in international studies is a degree program that 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 BS in international studies 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 organized in either a 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, the international business track offers 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. Similarly, in cooperation with the public policy program, we offer an accelerated BS/MS option that allows qualified students to obtain a BS degree in four years and the MS degree in public policy after one additional year of study.

International experience

The program requires students to participate in an international experience. Such experiences include, but are not limited to, approved study abroad programs, cooperative education in foreign countries, internships in foreign countries, employment in international organizations, or employment 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 three important regions 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

Year	Course	Qtr. Cr. Hrs.
First Year	Liberal Arts*	12
	Mathematics and Science Requirement**	8
	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
Second Year	International Trade and Finance 0511-454	4
	Liberal Arts*	12
	Mathematics and Science Requirement**	8
	Data Analysis I and II 1016-319, 320	10
	Language Requirement	12
	Web Foundations 4002-200	4
	Wellness Education†	0
Third Year	International Studies Track	8
	Language Requirement	12
	Liberal Arts*	12
	Mathematics and Science Requirement**	4
	Open Electives	8
	International Experience	0
Fourth Year	International Studies Track	8
	Capstone Seminar 0524-501	4
	Liberal Arts*	16
	Open Electives	12
	Total Quarter Credit Hours	**182-184**

* *Please see Liberal Arts General Education Requirements for more information.*
** *Please see Mathematics and Science General Education Curriculum.*
† *Please see Wellness Education Requirement for more information.*

Professional and Technical Communication

Bruce A. Austin, Department Chairperson

www.rit.edu/ptc

The bachelor of science degree program 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.

The professional core

As part of their degree requirements, students enroll in a professional core—normally composed of five courses (for a total of 20 quarter credit hours)—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.

Required communication courses (60 quarter credit hours)

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 Communications
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

General education electives (78 quarter credit hours)

Other required courses:	Qtr. Cr. Hrs.
Mathematics and Science Requirements	20
Computer Science	4
Liberal Arts Requirements	52
First-Year Experience	2

Communication electives

Communication electives include:

0535-316	Qualitative Research Methods
0535-410	Computer-Mediated Communication
0535-411	Health Communication
0535-414	Interpersonal Communication
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
0535-473	eJournalism
0535-474	Reporting in Specialized Fields
0535-534	Communication and Documentary Film
0535-580	International Media
0535-426	Archival Research
0535-420	Argument and Discourse
0535-422	Ethics in Technical Communication
0535-550	Film and Society
0535-520	Intercultural Communication
0535-525	Special Topics in Communication
0535-416	Newswriting
0535-415	Organizational Communication
0535-490	Persuasion and Social Change
0535-421	Public Relations
0535-483	Small Group Communication
0535-502	Speechwriting
0535-452	Uses and Effects of the Mass Media
0535-484	Rhetoric of Race Relations

Professional and technical communication, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	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
Third Year	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
Fourth Year	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. Every student has a mail folder and an e-mail account to increase communication between the college and the student. The program attracts energetic students who are actively involved in numerous communication-related extracurricular activities, including 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

The 15 faculty members in the department of communication hold the highest degrees in their fields, 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.

Transfer admission

Many students transfer into the professional and technical communication program from other colleges and universities. The program attracts transfer students from diverse liberal arts degree programs as well as other professional programs such as business, science, and computer science. Transfer students from most associate degree programs normally can expect to complete their requirements in two years.

Transfer credit is evaluated on a course-by-course basis; that is, each course completed as part of a previous degree program is compared to a specific program requirement. Transfer credit is assigned where 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 prepares students for graduate study in law, public relations, communication, health services, and management. The department of communication offers a master of science degree in communication and media technologies. The MS degree is an interdisciplinary, advanced program of study combining courses in communication with course work in an applied or professional program. Visit the website www.rit.edu/cmt or consult the RIT Graduate Bulletin for more information.

Psychology

Kathleen C. Chen, Department Chairperson
www.rit.edu/cla/psychology

The bachelor of science degree program 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 requirement, a choice of four interdisciplinary tracks, and a cooperative education requirement.

Technical/professional concentration requirement: The program seeks students with an aptitude for technical and quantitative reasoning as well as an interest in psychology. Students are required to complete a technical concentration and may choose from the following areas: science, mathematics and statistics, information technology, imaging science, business, criminal justice, or an individualized concentration developed with an adviser's assistance.

Four interdisciplinary tracks: Students choose one of the following interdisciplinary tracks: visual perception, information processing, biopsychology, or clinical psychology. Technology is integrated with psychology in 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 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.

Transfer admission

The psychology program provides excellent transfer opportunities for students from other institutions, as it requires a core of psychology courses for which transfer students may receive credit. The point of entry into the program is highly flexible, since there is only one fixed sequence: Introduction to Psychology (0514-210), 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.
First Year	Freshman Seminar 0514-201	1
	Introduction to Psychology 0514-210	4
	Scientific Writing 0514-315	4
	Psychological Statistics 0514-350	4
	Childhood and Adolescence 0514-440	4
	Social Psychology 0514-444	4
	Human Biology I, II with Lab 1004-211, 212, 231	8
	Algebra for Management Science 1016-225	4
	Web Foundations or Higher 4002-xxx	4
	Liberal Arts*	12
	First-Year Enrichment I, II 1105-051, 052	2
	Wellness Education†	
Second Year	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*	16
	Technical/Professional Concentration	4
	University Elective	4
	Cooperative Education (summer quarter)	Co-op
Third Year	Interdisciplinary Courses	12
	Technical/Professional Concentration	8
	Liberal Arts*	16
	University Elective	12
	Cooperative Education (summer quarter)	Co-op

Fourth Year	Interdisciplinary Course	4
	University Elective	16
	Senior Project in Psychology 0514-597	4
	Liberal Arts*	12
	Total Credit Hours	183

* 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

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 program provides integration of diverse disciplines. This sequence makes up the core of the curriculum and enables students to integrate diverse subjects and apply them to the analysis of public policy.

Integrated qualitative and quantitative skills—The program balances both quantitative and qualitative approaches to the analysis of public policy so that students are able to achieve a full systems-level grasp of policy issues.

Solid grounding in liberal arts—While our graduates will have quantitative and qualitative training, by the end of their academic career they also will have taken liberal arts courses with a broad disciplinary range. It is this grounding in humanistic values combined with technology and science that makes our program both balanced and unique.

The strategy of the curriculum design is to train students to think and analyze policy in terms of complex, interconnected systems. This training is in high demand in the public, private, and nonprofit sectors.

Accelerated dual degree option

Students can choose a four-year BS degree or an accelerated five-year option leading to a bachelor of science in public policy and a master of science 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

The public policy 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.
First Year	**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
Second Year	**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
	Applied Econometrics 0511-457	4
	or	
	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

Third Year	**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
Fourth Year	**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
	Total Quarter Credit Hours	182

* Please see Liberal Arts General Education Requirements for more information.
† Please see Wellness Education Requirement for more information.
** Please see Mathematics and Science General Education Curriculum for more information.
Note: Students may take up to 12 quarter credit hours of 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/

Eighty percent of United States residents work, learn, and raise families in metropolitan areas. Reaching beyond borders, the urban communities of the world are increasingly linked in a global economic and cultural system. The prominence and interdependence of today's urban landscape has created a pressing need for individuals with the ability to create sustainable cities. Those who also have experience using advanced analytical software such as SPSS and GIS can virtually assure their success in this field.

With this in mind, RIT's urban and community studies program has been designed to give students the knowledge and technological skills needed to address the issues facing our rapidly urbanizing world. 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.

After graduation, students will be ready to take on positions in many different specialized fields, including health care, environmental consulting, city government, social services, local or international development, and, of course, 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 is communities in global perspective, which 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

RIT has a longstanding tradition of providing students with hands-on training, particularly with the paid, professional experience gained through its cooperative education program. In addition to performing field work with local agencies and organizations through summer- or quarter-long internships and co-op assignments, urban and community studies students will have an active lab in Rochester—the third-largest city in New York state.

Accelerated dual degree option

Students who wish to pursue a graduate degree may take advantage of the college's 4 + 1 program. Students complete the BS degree in urban and community studies and an MS degree in public policy in five years. The university also is initiating cooperative programs that would allow graduates of the urban and community studies program to pursue either a master's or doctorate degree through Cornell University or the University of Buffalo at Amherst.

Urban and community studies, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	**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
	Urban Planning and Policy 0515-413	4
	Mathematics and Science Requirements**	22
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	**Urban and Community Studies Core:**	
	Quantitative Methods 0526-440	4
	Qualitative Methods 0515-406	4
	Social Change 0515-444	4
	Global Cities 0510-445	4
	GIS Applications in Urban and Community Studies 0526-441	4
	Introduction to Multimedia: The Internet and the Web 4002-320	4
	Liberal Arts*	24
	Wellness Education†	0
Third Year	**Urban and Community Studies Core:**	
	Diversity in the City 0515-485	4
	UCS Track	24
	General Education Electives	20
	Cooperative Education or Internship (summer)	Co-op
Fourth Year	UCS Track	4
	General Education Electives	12
	Senior Thesis	4
	Free Electives	20
	Total Quarter Credit Hours	***184***

* *Please see Liberal Arts General Education Requirements for more information.*
† *Please see Wellness Education Requirement for more information.*
** *Please see Mathematics and Science General Education Curriculum.*

RIT Exploration Program

Andrea C. Walter, Program Director

www.rit.edu/cla/ritexploration/

Students are often attracted to RIT because of the opportunity to specialize in a career-oriented or technical program, but many freshmen have not chosen a career area by the time they have been accepted for admission. They want an opportunity to explore different fields before making a decision. The RIT Exploration program gives students a chance to formulate an educational and career plan during their first quarters at RIT.

Students in the RIT Exploration program may enroll in liberal arts courses in the humanities and social sciences as well as courses in art, mathematics, science, and computer science. They also take a one-credit course, Career Exploration Seminar (0520-201), in which they explore their own abilities and interests and the array of programs offered at RIT.

As students identify a major suitable to their backgrounds, abilities, and interests, they take introductory courses in that area to ensure that the major is appropriate for them. They may take courses in many major areas represented by RIT departments. Once students identify a major in their first year, they apply for a transfer to the new department.

Students who select the RIT Exploration program must meet the standards and requirements of the RIT schools and colleges to which they eventually apply. Occasionally, some additional time may be necessary to complete degree requirements because the student has spent time in preliminary exploration.

Each student is assisted by a faculty adviser, who assists in the choice of courses and the selection of a career path and degree program.

After one to three quarters in the RIT Exploration program, each student may reasonably anticipate:
- a clearer basis for making a decision regarding long-range career plans,
- credit for courses that would apply to RIT degree programs or to programs at other colleges, and
- assistance in matriculating into the curriculum of the student's choice at RIT, provided that relevant standards and requirements are met and that space in the program is available.

College of Science

Ian Gatley, Dean
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. We are career-oriented. At the same time 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

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 100 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 laboratory 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 work force 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 the computer in the applications 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 quarters of on-campus academic study. Co-op employment experience has many advantages.

Through co-op, students gain insight that helps them with classroom work. Co-op gives them a chance to find out what working in their field is really like while acquiring 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 a clinical training site.

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 College of Science 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. In recent surveys 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: The College of Science offers minors in 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 program of study. 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.

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 doctoral program 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 doctoral programs in imaging science and color science.

Premedical Studies Advisory Program

Kristen M. Waterstram-Rich, Director

www.premed.rit.edu

The premedical studies advisory program is designed to provide guidance and assistance to all RIT students who want to become physicians, dentists, optometrists, podiatrists, or veterinarians. Faculty members who participate in this program provide advice on the prerequisites (course selection, health-related experiences, extracurricular activities) needed for application to health-related professional schools. In addition, they provide assistance with the application process. Although admission to medical school, as well as other health-related professional schools, is a highly competitive process, over the past decade 85 percent of our pre-professional students have gained admission.

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. 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 will 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 virtually all medical schools, courses in mathematics, psychology/behavioral sciences, or biology may be required by specific schools. The admissions 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 (already existing within medical sciences programs), shadowing practitioners in the field, or actual employment in a health care setting. RIT's Office of Cooperative Education and Career Services may help students identify co-op or employment opportunities, including an exclusive nursing assistant position at a local hospital for those who want direct patient care experience.

General science exploration option
Eileen D. Marron Keating, Director
www.rit.edu/cos/uds/main.html

Many high school students do not know which major they prefer. The College of Science encourages these students to attend RIT if they have a strong interest in science, mathematics and statistics, or medical science careers. A student with multiple interests may apply to the college's general science exploration program without designating a specific major. The program encourages students to explore their options before deciding which degree to pursue.

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 completion of a degree.

General science exploration option, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Seminar	2
	Mathematics or calculus sequence	10-12
	Choice of two laboratory sciences:	
	Biology	12
	Chemistry	13
	Physics	8-12
	Imaging Science	4
	Additional course choices:	
	Computer Science	4-8
	Liberal Arts*	4-12
	First-Year Enrichment	2
	Wellness Education†	0
	Total Credit Hours (each quarter)	*16-18*

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

School of Life Sciences

Richard L. Doolittle, Head

Biomedical Sciences

G. Thomas Frederick, Program Director
Richard L. Doolittle, Program Director

www.rit.edu/cos/medical/biomedical_sciences.html

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/veterinary 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 declaration of 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.
First Year	Freshman Symposium 1001-200, 259	2
	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, 11 1016-214, 215	6
	Wellness Education†	0
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2

Second Year	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
Third Year	College Physics I, II, III 1017-211, 212, 213	12
	Science/Track Electives	16
	University-wide Electives	4-8
	Liberal Arts*	12
Fourth Year	Science/Track Electives	24
	University-wide Electives	17
	Total Quarter Credit Hours	***180-182***

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

Program Concentrations
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

Richard L. Doolittle, Head

The department of biological sciences offers programs leading to the AS and BS degrees in biology. Graduates receiving the BS degree 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.
First Year	Freshman Symposium 1001-200, 259	2
	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
Second Year	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
Third/ Fourth Years§	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	22
	Cooperative Education 1001-499 (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.
‡ 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 department of biological sciences' BS in biotechnology program was the first of its kind when it was introduced in 1983. A graduate who earns this degree is prepared to immediately assume challenging positions in research, development, and management in biomedical research, human genetics, agriculture, food products, pharmaceuticals and vaccine development, environment and energy, forensic science, and genetic counseling.

The advanced nature of the 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 biology BS/MBA 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.
First Year	Freshman Symposium 1001-200, 259	2
	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
Second Year	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
Third and Fourth Years‡	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	27
	Cooperative Education 1001-499 (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.
‡ 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.
First Year	Freshman Symposium 1001-200, 259	2
	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
Second Year	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
Third and Fourth Years‡	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	13
	Cooperative Education 1001-499 (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.
‡ 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/

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.

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 weeks), 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 50 quarter credit hours required for the bioinformatics MS degree.

Bioinformatics, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Symposium 1001-200, 259	2
	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
Second Year	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
Third and Fourth Years	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	19
	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.
First Year	Freshman Symposium 1001-200, 259	2
	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
Second Year	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
Third Year	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
	Introduction to Organic Chemistry 1011-213	3
	Introduction to Organic Chemistry Lab 1011-207	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
Fourth Year	Genetics 1001-421	4
	Genomics 1001-492	4
	Ethics in Bioinformatics 1001-725	3
	Molecular Modeling and Proteomics 1001-494	4
	Parallel Computing I 4005-735	4
	Biochemistry I, II, III 1009-702, 703, 704	9
	Liberal Arts*	4
	University-wide Electives	6

		Qtr. Cr. Hrs.
Fifth Year	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/

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 at RIT provide students with the education and experiences they need to be successful.

Accelerated dual degree options

The environmental science program is unique because it is designed and implemented jointly by the College of Science and College of Liberal Arts. Students can choose a four-year BS degree or an accelerated five-year BS/MS option. The five-year option is strongly recommended because it provides students 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 your education meets the 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 at RIT is one of the strongest programs available with respect to mathematics and science.

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.
First Year	Freshman Symposium 1001-200, 259	2
	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
	Choose one of the following math sequences:	
	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
	Wellness Education†	0
Second Year	Applications of GIS 1006-350	4
	Fundamentals of Organic Chemistry 1011-202	3
	Introduction to Organic Chemistry Lab 1011-207	1
	Choose one of the following physics sequences:	
	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*	16
Third Year	General Ecology 1001-340	4
	Conservation Biology 1001-475	4
	Capstone in Environmental Science 1006-503	4
	Great Lakes I, II 0508-463, 0508-464	8
	Introduction to Hydrology and Lab 0630-380, 382	4
	Environmental Science Concentration§	8
	Liberal Arts*	12
	General Education Elective**	0-3
Fourth Year	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.

Requirements for the BS/MS degree

(This program is pending approval by the New York State Department of Education.)
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.
First Year	Freshman Symposium 1001-200, 259	2
	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
	Choose one of the following math sequences:	
	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
	Wellness Education†	0
Second Year	Applications of GIS 1006-350	4
	Fundamentals of Organic Chemistry 1011-202	3
	Introduction to Organic Chemistry Lab 1011-207	1
	Choose one of the following physics sequences:	
	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*	16
Third Year	General Ecology 1001-340	4
	Conservation Biology 1001-475	4
	Capstone in Environmental Science 1006-503	4
	Great Lakes I, II 0508-463, 0508-464	8
	Introduction to Hydrology and Lab 0630-380, 382	4
	Environmental Science Concentration§	8
	Liberal Arts*	12
	General Education Elective**	0–3
Fourth Year	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§	8
	University-wide Electives (undergraduate)	20
	Liberal Arts*	4
Fifth Year	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
	Fundamentals of Statistics II 0307-712	4
	Professional Electives	12-16
	Environmental Science Concentration§	4
	Liberal Arts*	4
	Total Quarter Credit Hours	**233-236**

* Please see Liberal Arts General Education Requirements for more information
† Please see Wellness Education Requirement for more information.
** Number of General Education Elective credits will depend on choice of calculus courses.
§ Please see environmental science concentrations.
Note: The articulation of the BS and the MS curriculum is accomplished by the inclusion of 11 quarter credit hours of graduate work in the fourth year of the curriculum.

Medical Sciences

Richard L. Doolittle, Head

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

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, general surgery, orthopedic surgery, 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.
First Year (Pre-professional)	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
Second Year (Pre-professional)	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
Third Year (Professional)	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
Fourth Year (Professional)	Clinical Rotation II, III, IV 1032-491, 492, 493‡	36
	Total Quarter Credit Hours	*189*

* 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

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 and echocardiographers.

RIT's medical sonography program is one of only a few such degree programs in the nation. It offers both a bachelor of science degree in general ultrasound and two certificate options. The certificate options include a general track (abdomen/small parts and obstetrics and gynecology, with an introduction to vascular) and an echocardiography track. 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 number 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. 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 or the head of the department of medical sciences for further information on BS degree requirements.

Requirements for the certificate options

Each 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 options are 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 and echocardiographic 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, echocardiographers, physicians, and other health care professionals to learn, develop, apply, and sharpen the necessary skills to perform general ultrasound and echocardiographic 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.
First Year	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
Second Year	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
Third Year	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
	University-wide Electives	12
	Liberal Arts*	12
Fourth Year (Internship)	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
	Total Quarter Credit Hours	**184**

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

Diagnostic medical sonography (general track), 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
Internship	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
	Total Quarter Credit Hours	**70**

* *Other prerequisites may apply.*

Diagnostic medical sonography (echocardiography track), certificate program, typical course sequence
Must be completed before entering clinical internship*

	Qtr. Cr. Hrs.
Cardiac Anatomy and Physiology 1030-501	3
Echocardiography Scanning 1030-408	2
Electrophysiology and Cardiac Pharmacology 1030-420	3
Pathophysiology 1026-415	4
Ultrasound Instrumentation I 1030-409	4
Ultrasound Instrumentation II 1030-410	4
Internship Echocardiography I 1030-501	3
Ischemic Heart Disease: Stress Echo 1030-510	2
Cardiac M-Mode 1030-515	2
Clinical Echocardiography I 1030-520	7
Echocardiography II 1030-502	3
Congenital Heart Disease I 1030-530	2
Seminar in Echocardiography 1030-525	2
Clinical Echocardiography II 1030-521	7
Echocardiography III 1030-503	3
Congenital Heart Disease II 1030-565	2
Echocardiography Special Topics 1030-531	2
Clinical Echocardiography III 1030-522	7
Total Quarter Credit Hours	*62*

* Other prerequisites may apply.

Exercise Science

Richard L. Doolittle, Program Director

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
Choose one of the following courses:	
1026-307 Exercise Prescription for Special Populations	4
0620-300 Sports Nutrition	
Total Quarter Credit Hours	*12*

Sophia A. Maggelakis, Head

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.

Actuarial studies

A plan of study has been designed to assist students seeking a career in the actuarial sciences. These courses not only provide a foundation for students who will work as actuaries but also prepare 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.

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 also 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.

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 accelerate the MBA degree from RIT through careful choice of undergraduate courses. With one year of additional study, a student can earn the MBA degree.

Applied mathematics, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
	Choose one of the following computer science options:	
	Computer Science Option 1 4001-211 and 4003-231	
	Computer Science Option 2 4003-231 and 4003-232	8
	Science Electives	12
	Liberal Arts*	12
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	Multivariable Calculus 1016-305	4
	Differential Equations I 1016-306	4
	Probability and Applied Statistics I 1016-351, 352	8
	Cooperative Education Seminar 1016-399	0
	Mathematics Elective	4
	Linear Algebra I 1016-331	4
	Liberal Arts*	12
	Vector Calculus 1016-410	4
	University-wide Electives	10
	Technical Writing 0502-444	4
Third Year	Choose one of the following:	
	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
Fourth Year	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
Fifth Year‡	Abstract Algebra I, II 1016-531, 532	8
	Application Area	8
	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.*

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, conduct experiments and interpret the results. Application areas include product designs, quality control, marketing, customer satisfaction, and actuarial sciences.

The BS in applied statistics may be combined with an MS in applied and computational mathematics. An accelerated program of study allows students who choose this option to receive both the BS and MS degrees following one year of graduate study.

Applied statistics, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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 Option 4001-211 or 4003-231	4
	Statistical Computing with Excel and Minitab 1016-260	2
	University-wide Elective	2
	Science Electives	12
	Liberal Arts*	8
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
Second Year	Multivariable Calculus 1016-305	4
	Differential Equations 1016-306	4
	Probability and Applied Statistics I 1016-351, 352	8
	Co-op Seminar 1016-399	0
	Applied Statistics II 1016-353	4
	Statistical Computing 0307-442	4
	Linear Algebra I 1016-331	4
	Technical Writing 0502-444	4
	Choose one of the following courses:	
	Statistical Quality Control 1016-358	4
	Research Sampling Techniques 1016-457	4
	Liberal Arts*	16
Third Year	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

		Qtr. Cr. Hrs.
Fourth Year	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
Fifth Year§	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.

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.

The BS in computational mathematics can be combined with an MS in computer science or an MS in applied and computational mathematics. The accelerated dual degree option allows qualified students to receive both the BS and MS degrees with one additional year of graduate study.

Computational mathematics, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	Multivariable Calculus 1016-305	4
	Differential Equations I 1016-306	4
	Probability and Applied Statistics I 1016-351, 352	8
	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
Third Year	Linear Algebra II 1016-432	4
	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
Fourth Year	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

		Qtr. Cr. Hrs.
Fifth Year‡	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.

Department of Chemistry

L. Paul Rosenberg, Department Head

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 chemistry BS 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. There also is an option for a BS/MS in chemistry/materials science and engineering.

Chemistry

The BS degree in chemistry, which has been approved by the Committee on Professional Training of the American Chemical Society, 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.
First Year	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
	Computer Programming Language 4002-208	4
	Liberal Arts*	16
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
Second Year	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
Third Year	Differential Equations 1016-306	4
	University Physics I, II, III 1017-311, 312, 313	12
	Introduction to Biochemistry 1009-300#	1
	Chemical Thermodynamics 1014-441	4
	Chemical Thermodynamics Lab 1014-445	1
	Liberal Arts*§	12
	Cooperative Education 1010-499 (optional)	Co-op
Fourth Year	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
Fifth Year	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	**181**

* 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.
First Year	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
	Computer Programming Language 4002-208	4
	Liberal Arts*	16
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
Second Year	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	
	Systematic ID of Organic Compounds III Lab 1013-437	2
	Liberal Arts*	8
	Cooperative Education 1010-499 (optional, summer)	Co-op
Third Year	Chemical Literature 1010-401	2
	University Physics I, II, III 1017-311, 312, 313	12
	Introduction to Biochemistry 1009-300#	1
	Chemical Thermodynamics 1014-441	4
	Chemical Thermodynamics Lab 1014-445	1
	Liberal Arts*‡	12
	Chemistry Electives§	
	Cooperative Education 1010-499 (optional, summer)	Co-op
Fourth Year	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
Fifth Year§	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.
First Year	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
	Computer Programming Language 4002-208	4
	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
Second Year	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
Third Year	Introduction to Biochemistry 1009-300	1
	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
Fourth Year	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
Fifth Year##	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)

		Qtr. Cr. Hrs.
First Year	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
	Computer Programming Language 4002-208	4
	Liberal Arts*	16
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
Second Year	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
Third Year	Introduction to Biochemistry 1009-300**	1
	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
Fourth Year	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§	
Fifth Year	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.
First Year	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
	General Biology 1001-201, 202, 203	9
	General Biology Lab 1001-205, 206, 207	3
	Computer Programming Language 4002-208	4
	Liberal Arts*	4
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
Second Year	Instrumental Analysis 1008-311	3
	Instrumental Analysis Lab 1008-318	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
	University-wide Electives‡	
	Cooperative Education 1010-499 (optional)	Co-op
Third Year	Introduction to Biochemistry 1009-300	1
	Differential Equations 1016-306	4
	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
	Systematic Identification of Organic Compounds III Lab 1013-437	2
	Chemical Thermodynamics 1014-441	4
	Chemical Thermodynamics Lab 1014-445	1
	Liberal Arts*	8
	Cooperative Education 1010-499 (optional)	Co-op

		Qtr. Cr. Hrs.
Fourth Year	Chemical Kinetics 1014-443	4
	Chemical Kinetics Lab 1014-447	1
	Chemical Literature 1010-401	2
	Biochemistry 1009-502	3
	Biochemistry: Nucleic Acids 1009-504	3
	Biochemistry: Experimental Techniques Lab 1009-505	3
	Liberal Arts*	8
	University-wide Electives‡	
	Cooperative Education 1010-499 (optional)	Co-op
Fifth Year	Biochemistry: Metabolism 1009-503	3
	Science Electives‡	
	Liberal Arts*	8
	Cooperative Education 1010-499 (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.
‡ 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 180 for graduation.

Biochemistry, BS degree, typical course sequence (ACS certified)

		Qtr. Cr. Hrs.
First Year	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
	General Biology I, II, III 1001-201, 202, 203	9
	General Biology Lab 1001-205, 206, 207	3
	Computer Programming Language 4002-208	4
	Liberal Arts*	4
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
Second Year	Instrumental Analysis 1008-311	3
	Instrumental Analysis Lab 1008-318	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
	Science Electives‡	
	Cooperative Education 1010-499 (optional)	Co-op
Third Year	Introduction to Biochemistry 1009-300	1
	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*	8
	Cooperative Education 1010-499 (optional)	Co-op
Fourth Year	Chemical Kinetics 1014-443	4
	Chemical Kinetics Lab 1014-447	1
	Chemical Literature 1010-401	2
	Biochemistry 1009-502	3
	Biochemistry: Nucleic Acids 1009-504	3
	Biochemistry: Experimental Techniques Lab 1009-505	3
	Quantum Chemistry 1014-442	4
	Quantum Chemistry Lab 1014-446	1
	Liberal Arts*	8
	Cooperative Education 1010-499 (optional)	Co-op
Fifth Year	Biochemistry: Metabolism 1009-503	3
	Inorganic Chemistry I 1012-562	4
	Preparative Inorganic Chemistry Lab 1011-565	3
	Liberal Arts*	8
	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. Biology electives may be Cell Biology (1001-311), Molecular Biology (1001-350), Genetics (1001-421), or Genetic Engineering (1001-450). Electives are necessary to bring the total quarter credit hours to 182 for graduation.

Biochemistry, combined BS/MS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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 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
	Computer Programming Language 4002-208	4
	Liberal Arts*	4
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
Second Year	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
Third Year	Introduction to Biochemistry 1009-300	1
	Systematic Identification of Organic Compounds III Lab 1013-437	2
	University Physics I, II, III 1017-311, 312, 313	12
	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
Fourth Year	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#	
Fifth Year	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 amount 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.
First Year	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
	Computer Programming Language 4002-208	4
	Liberal Arts*	16
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
Second Year	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
Third Year	Introduction to Biochemistry 1009-300	1
	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
Fourth Year	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
Fifth Year	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	**180**

* *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.
First Year	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
	Computer Programming Language 4002-208	4
	Liberal Arts *	20
	First-Year Enrichment 1105-051, 052	2
	Wellness Education†	0
	Cooperative Education 1010-499 (optional, summer)	Co-op
Second Year	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
Third Year	Introduction to Biochemistry 1009-300#	1
	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
Fourth Year	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
Fifth Year§	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).

Department of Physics

David J. Axon, Head

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. 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.
First Year	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 and 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
Second Year	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
Third Year	Intermediate Mechanics I, II 1017-401, 402	8
	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
Fourth Year	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
	Total Quarter Credit Hours	187-188

* 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

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.
First Year	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
Second Year	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
Third Year	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
Fourth Year	Senior Project 1051-502	4
	Senior Project 1051-503	4
	University-wide Electives	12
	Professional Electives	8
	Liberal Arts*	8
	Total Quarter Credit Hours	**182**

* 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, Vice President and Dean

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. Nearly 1,100 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 preprofessional 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, 93 percent of NTID graduates who chose to enter the workforce have found employment.

Deaf and hard-of-hearing students who take courses or matriculate into one of RIT's 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 prebaccalaureate programs. Associate of 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 of 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. Prebaccalaureate 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 AAS and associate of occupational studies (AOS) 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, 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.

Prebaccalaureate studies: The prebaccalaureate 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. Prebaccalaureate programs are offered through arts and imaging studies, science and mathematics, and engineering studies departments. The prebaccalaureate studies career exploration option is available to students who are undecided as to their program of study.

The prebaccalaureate 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 studies/ASL as well as technical sampling courses or experiences. Some students also may take introductory courses in specific programs of study and general education courses and be involved in extracurricular or other college-oriented activities.

A career development counselor is assigned to help students evaluate the information and make career decisions. Students can remain in the career exploration studies program for one to three academic quarters. Additional quarters in the program are possible with the approval of the program 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.

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
Applied Mechanical Technology	College of Applied Science and Technology	• Mechanical Engineering Technology • Manufacturing Engineering Technology
Applied Optical Technology‡	College of Applied Science and Technology	• Manufacturing Engineering Technology
Art and Computer Design†	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** • 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 Technoloy • Photojournalism **School of Print Media** • Graphic Media • New Media Publishing • Visual Media
Automation Technologies	College of Applied Science and Technology	• Mechanical Engineering Technology • Manufacturing Engineering Technology
Business Studies Accounting Technology Business Business Technology	College of Business	• Accounting • Finance • Consumer Finance • Graphic Media Marketing • International Business • Management • Management Information Systems • 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
Computer-Integrated Machining Technology Electives: • Machining • Precision Optics Manufacturing	College of Applied Science and Technology	• Manufacturing Engineering Technology
Digital Imaging and Publishing Technology†	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

† This program has been approved for discontinuance. No new students will be admitted in 2008-09.

‡ This program has been suspended. No new students will be admitted in 2008-09

** Admission to this program has been suspended for the 2008-2009 academic year.

Note: In addition to the transfer degree and career-focused programs noted above, NTID also offers prebaccalaureate 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.

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.

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, prebaccalaureate 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 studies/American Sign Language 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.

General education distribution requirements

Degree	Freshman Seminar	Math and Science	Deaf Studies/ASL[1]	Language and Literature	Humanities	Social Sciences	Capstone
AS	2	6	–	Liberal Arts (COLA)-8[2]	Liberal Arts (COLA)-8	Liberal Arts (COLA)-8	
AAS	2	6	3	Liberal Arts (COLA)-4[3]	Liberal Arts (COLA)-8	Liberal Arts (COLA)-8	3[4]
AOS	2	6	(3)[1]	12	6[5]	6[5]	3[4]

[1] The deaf studies/ASL requirement can be satisfied by taking three credits in American Sign Language or an identified deaf studies course. The three-credit course taken to fulfill the deaf studies/ASL requirement can fulfill three credits in either the humanities or social sciences, depending upon which discipline offers the course selected.

[2] Students earning the AS degree are required to take Writing Seminar (0502-227)and one, four-credit Arts of Expression (0505-319)course.

[3] Students earning the AAS degree are required to take Writing Seminar.

[4] The capstone requirement can be satisfied by taking either Special Topics: Society and Technology (0880-398) or Special Topics include Capstone: Society and Technology (0880-398) or Special Topics: Capstone: Exploration in Social Responsibility (0882-398). Students in AAS Transfer Degree programs may take Science, Technology, and Values (0508-211) as a substitute.

[5] 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.

Degree requirements

Students must complete a minimum number of general education credits for each degree. The general education distribution requirements chart shows the credit hour and distribution requirements for the AS, AAS, and AOS degrees. (See the course sequences for individual programs of study.)

Level of courses in the curriculum

Degree requirements must be completed at the appropriate level in the curriculum. There are four levels of courses in the NTID general education curriculum: introductory (A), fundamental (B), intermediate (C), and bridging (D). Students not yet prepared for courses required for their degree begin with courses at a lower level and enter required courses when they have completed the prerequisites.

Course placement

The goal of assessment for course placement is to ensure that each student begins his or her study in the appropriate course. Assessment for initial course placement will be made during summer orientation in the following areas: mathematics, American Sign Language, and writing and reading.

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 and literature: The English program is designed to enable students to develop English literacy skills. There are three developmental sequences of courses, in academic writing, nonfiction reading, and literature. The academic writing and nonfiction reading sequences each have courses at four levels (A–D), while the literature sequence has courses at three levels (B–D). There also is a two-course integrated sequence at level A for students who enter with weaker skills. Courses at levels A-C of this program provide the English literacy skills required for career-focused associate degrees. Level D courses prepare students to access the College of Liberal Arts' writing curriculum required for transfer associate degrees and baccalaureate degrees.

Students who plan to graduate with the AOS degree are required to complete 12 credits of English at level C or higher. Students who enter NTID with English skills below the level required for their degree of choice will need to successfully complete additional courses before taking the required English courses.

Social sciences and humanities: The social sciences courses provide students with a broad exposure to key concepts and issues in anthropology, sociology, psychology, economics, and political science.

The humanities curriculum includes courses in communication studies, history, fine arts, performing arts, and philosophy. Students also have the opportunity to study foreign languages in the College of Liberal Arts. The communication studies curriculum offers courses to enhance students' understanding of the communication process and develop effective individual, group, professional, and cross-cultural communication skills based on linguistic background, communication preferences, and needs of a variety of audiences.

The performing arts curriculum includes performance and technical components. The curriculum makes use of NTID's Panara Theatre and a smaller experimental theater where students stage plays and performances and create their own works in American Sign Language and English. This curriculum provides a bridge to the BFA program in film/video/animation in the College of Imaging Arts and Sciences.

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 studies/American Sign Language

Students have an opportunity to study American Sign Language and learn about their heritage as deaf people through the deaf studies/ASL curriculum. All students are required to complete one three-credit course in deaf 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 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 Special Topics: Capstone: Society and Technology (0880-398) or Special Topics: Capstone: Exploration in Social Responsibility (0882-398). Students in AAS transfer degree programs may take Science, Technology, and Values (0508-211) as a substitute.

College of Liberal Arts composition sequence

The College of Liberal Arts, through the NTID department of liberal studies, offers a two-course writing sequence, Written Communication I and II (0502-110, 111) as preparation for the College of Liberal Arts course Writing Seminar. These courses provide additional experience in writing, reading, and critical thinking techniques needed for success in Writing Seminar (0502-227). Eligible students must meet with the liberal arts instructional/support faculty before registering for these courses.

Liberal arts requirements

Deaf and hard-of-hearing students enrolled in baccalaureate, AS, or AAS degree programs take required liberal arts courses through the College of Liberal Arts. At the lower division, students can choose between course sections taught by either NTID or College of Liberal Arts faculty members.

Where liberal arts courses are taught by NTID faculty members, instructors 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 2008–09 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 2008–09 is approximately $700.

NATIONAL TECHNICAL INSTITUTE FOR THE DEAF FIXED CHARGES 2008–09 (DOMESTIC STUDENTS)

	Summer Vestibule Program 8/17-8/23/08	NSSO* 8/25-8/31/08	Fall 9/1-11/15/08	Winter 12/1/08-2/28/09	Spring 3/9-5/22/09	Summer 6/1-8/15/09
Tuition	$583	0	$3,267	$3,267	$3,267	$3,267
Room	$207	0	$1,807	$1,807	$1,807	$1,807
Board (standard meal plan)	$136	0	$1,320	$1,320	$1,320	1,281
Student fees†	0	0	$234	$234	$234	$234
Orientation fee‡			$200			
Student sickness insurance fee			$700			
Total	**$926**	**0**	**$7,528**	**$6,628**	**$6,628**	**$6,628**

* 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 ($68); student activities fee ($69); athletics fee ($8); Student Alumni Union fee ($87); and NTID activities fee ($2 per quarter).
‡ Charge to defray cost of fall Orientation program for freshmen and new students only.
§ Approximate amount
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.

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 (CCC-A) completed by a certified audiologist 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 ntidadmissions@rit.edu. Students may take tours of campus and arrange personal interviews. Both of these are strongly encouraged but are not required for admission.

Facilities

A modern academic and residential building complex on the RIT campus is designed to meet the specific needs of deaf and hard-of-hearing students. 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, VCRs, assistive listening systems, Internet access, 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 students with materials and information on careers and college programs with special services for deaf and hard-of-hearing students. Services include access to the computerized guidance system; aptitude, interest, and personality testing; and skill-building workshops on study skills, learning styles, and stress management.

The center is staffed by a professional counselor from the NTID counseling services department and student assistants. It is open daily with evening hours available during weekdays. For additional information or an appointment, call (585) 475-6468 (voice/TTY).

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 provide 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, 93 percent of NTID graduates who chose to enter the work force 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

Donna Gustina, Chairperson

www.ntid.rit.edu/aslie/index.cfm

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 1090-1120 (total of verbal and math sections). Equivalent ACT composite scores are 21-24. 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 or (585) 475-6700 (voice/TTY).

ASL-English interpretation, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	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 Numbers Skills Development 0875-300	4
	Liberal Arts*	4
	Processing Skills Development 0875-311	4
	Deaf Culture and Community 0875-212	4
Third Year	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
Fourth Year	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
	Total Quarter Credit Hours	*184*

‡ 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 (585) 475-6700 (voice/TTY).

ASL-English interpretation, AAS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	American Sign Language IV, V, VI 0875-301, 302, 303	12
	Introduction to the Field of Interpreting 0875-213	4
	Intermediate Fingerspelling and Numbers 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
Second Year	ASL to English Interpreting I, II 0875-316, 326	8
	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
	Total Quarter Credit Hours	*94*

* 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/itcs/

Computers are an important part of business, industry, and other parts of the economy, and the number of careers that involve work with computers increases daily. Computer careers involve maintaining computer software and hardware, networking so that computers can communicate with one another, and developing and working with various applications such as the Web and databases.

Students may choose from the AS (transfer), AAS, or AOS degree programs in information technology and computing.

Program concentrations
Students who choose the AAS or AOS degree options will select a program concentration in the second year. Concentrations include PC technical support, Web development and database, and networking and cyber security.

PC technical support: This concentration develops skills specific to working with office professionals to solve computer-related problems. These include working at a help desk responding to client PC problems or performing setup, upgrades, and repairs to PCs and PC peripherals.

Web development and database: In this concentration, students learn how to design and support websites. This may involve developing or modifying a website as well as developing and supporting the database linked to the website.

Networking and cyber security: Students will develop skills specific to network and network security support. This may involve server set-up, support and administration, network setup, troubleshooting or repair, identifying and implementing security policies, or installing appropriate hardware and software to support a secure and robust network.

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 businesses that use computers and networks.

AS degree (transfer) program

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.
First Year	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
Second Year	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	
	Total Quarter Credit Hours	*91-92*

* 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 Physiology of Human Development and Maturation (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, and PC and network support specialists.

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.
First Year	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
Second Year	Introduction to Programming 0805-230	3
	Introduction to UNIX 0805-220	3
	Microcomputer Database Software 0805-310	3
	Concentration Courses#	12
	Deaf 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.

AOS degree program

Upon completing the AOS degree program, students will qualify for a number of positions, including computer technicians, personal computer support specialists, and PC and network support specialists.

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 level-C English or above (nonfiction reading, academic writing, and literature). 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 computer technology, AOS degree, typical course sequence

		Qtr. Cr. Hrs.
First	Applications Software 0805-201	3
Year	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 or above)	8
	Communication Studies*	3
	Cooperative Education 0805-299	Co-op
	Wellness Education†	0
Second	Introduction to Programming 0805-230	3
Year	Introduction to UNIX 0805-220	3
	Microcomputer Database Software 0805-310	3
	Concentration Courses#	12
	Deaf Studies/ASL*	3
	Technical Electives**	6
	Science (B Level or above)	3
	English (C Level or above)	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.

Applied Mechanical Technology

Dino Laury, Interim Chairperson

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.
First	Engineering Fundamentals 0813-220	4
Year	Computing Tools for Engineering Technology 0890-212	4
	Choose two of the following:	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
Second	Introduction to Materials Technology 0610-211	3
Year	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
	Total Quarter Credit Hours	**98**

* Please see General Education Distribution Requirements chart for more information. AMT students are not required to take Capstone or Deaf studies/ASL courses.
† Please see Wellness Education Requirement for more information.

Applied Optical Technology**

Dino Laury, Interim Chairperson

www.ntid.rit.edu/current/departments/ist/AOT.php

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.
First Year	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 Studies/ASL*	3
	Liberal Arts*	4
	Wellness Education†	0
Second Year	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
Third Year	Precision Optics Manufacturing II 0827-245	3
	Optical Processes II 0827-201	4
	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.

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 level C English or above (nonfiction reading, academic writing, and literature). 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.
First Year	Engineering Fundamentals 0813-220	4
	Computing Tools for ET 0890-212	4
	Nonfiction Reading III 0883-210	4
	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
	Writing III 0883-211	4
	CAD Applications in ET 0890-214	4
	Applied Optical Physics 0885-200	4
	Precision Measurement 0813-255	2
	Introduction to CNC 0813-250	2
	Analyzing Literature 0883-200	4
	Wellness Education†	0
Second Year	Fundamentals of Photonics 0827-210	3
	Orientation to Lens Surfacing 0827-270	3
	CNC Graphics 0813-252	3
	Deaf 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
Third Year	Precision Optics Manufacturing II 0827-245	3
	Optical Processes II 0827-201	4
	Technical Elective	3
	Humanities*	3
	Capstone*	3
	Total Quarter Credit Hours	*106*

* Please see NTID's General Education Distribution Requirements chart for more information.
† Please see Wellness Education Requirement for more information.
** Please note: Admission to these programs has been suspended for the 2008-09 academic year.

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 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 level C English or above (nonfiction reading, academic writing, and literature courses at the 200 level or higher). 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.
First Year	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
Second Year	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 Studies/ASL*	3
	Liberal Arts*	12
	Cooperative Education 0825-299	Co-op

		Qtr. Cr. Hrs.
Third Year	Employment Seminar 0806-201	1
	Portfolio Presentation 0825-352	4
	Open Elective§	2
	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.*
§   *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.
First Year	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 or above)	12
	Science (Level B)	3
	Wellness Education†	0
Second Year	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 Studies/ASL*	3
	Social Science*	3
	Communication Studies*	3
	Cooperative Education 0825-299	Co-op
Third Year	Employment Seminar 0806-201	1
	Portfolio Presentation 0825-352	4
	Open Elective§	2
	Humanities*	3
	Capstone*	3
	Total Quarter Credit Hours	**105**

‡   *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.*

**This program has been approved for discontinuance, effective June 2009. No new students will be admitted for the 2008-09 academic year.

Arts and Imaging Studies

Kenneth F. Hoffmann, Chairperson

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 the RIT 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 level C English or above (nonfiction reading, academic writing, and literature courses at the 200 level or higher). 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
Total Quarter Credit Hours	*21*

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
Total Quarter Credit Hours	*21*

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
Total Quarter Credit Hours	*21*

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
Total Quarter Credit Hours	*21*

Arts and imaging studies, AAS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	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 Studies/ASL*	3
	Cooperative Education 0855-299	Co-op
Third Year	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.
First Year	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	12
	Concentration Courses	9
	Wellness Education†	0
Second Year	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 Studies/ASL*	3
	Cooperative Education 0855-299	Co-op
Third Year	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

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.
First Year	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
Second Year	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 Studies/ASL*	3
	Applied Robotics 0891-318	4
	Technical Elective	3
	Job Search 0886-101	2
	Cooperative Education 0891-299	Co-op
Third Year	Automated Systems Troubleshooting II 0891-330	4
	Liberal Arts*	4
	Technical Elective	3
	Capstone*	3
	Total Quarter Credit Hours	*107*

* *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 (nonfiction reading, academic writing, and literature). 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.
First Year	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
	Nonfiction Reading III 0883-210	4
	Programming Concepts 0891-216	4
	Industrial Electronics 0891-212	4
	Physics I 0885-201	4
	Writing III 0883-211	4
	Wellness Education†	0
Second Year	Electromechanical Devices 0891-214	4
	PLC Programming 0891-314	4
	Pneumatic and Hydraulic Systems 0891-210	3
	Analyzing Literature 0883-200	4
	Mechanical Devices and Systems 0891-316	3
	Deaf 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

Third Year		
	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/

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

The associate of 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 of science business degree.

Business, AS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	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

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.
First Year	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 Studies/ASL*	3
	Writing Seminar 0502-227	4
	Liberal Arts*	8
	Science (Level B)	3
	Wellness Education†	0
Second Year	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:*	
	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
	Total Quarter Credit Hours	**105-107**

‡ *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

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.
First Year	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 Studies/ASL*	3
	Wellness Education†	0
Second Year	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
Third Year	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

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 microcomputer accounting clerk.

Prerequisites
English: Placement into level C English or above (nonfiction reading, academic writing, and literature). 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.
First Year	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 or above)	12
	Wellness Education†	0
Second Year	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 Studies/ASL*	3
	Cooperative Education 0804-299	Co-op
Third Year	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

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.
First Year	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
Second Year	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
Third Year	Presentation Graphics 0890-320	4
	Technical Elective	3
	Construction Regulations 0890-375	3
	Deaf 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 equivalent career exploration course is a prerequisite, as are the following:

English: Placement into level C English or above (nonfiction reading, academic writing, and literature). 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.
First Year	Engineering Fundamentals 0813-220	4
	Computing Tools for Engineering Technology 0890-212	4
	Foundations of Algebra 0884-180	4
	Freshman Seminar 0887-200	2
	Nonfiction Reading III 0883-210	4
	Manufacturing Processes 0813-222	4
	CAD Applications in Engineering Technology 0890-214	4
	Integrated Algebra 0884-212	4
	Fundamental Geometry 0884-185	1
	Writing III 0883-211	4
	Construction CAD I 0890-210	4
	A/E/C Measuring System 0890-208	2
	Physics of Matter 0885-154	3
	Analyzing Literature 0883-200	4
	Wellness Education†	0
Second Year	Construction CAD II, III 0890-220, 230	8
	Construction Materials and Methods I, II 0890-255, 265	6
	Humanities*	3
	Elements of Trigonometry 0884-220	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 Studies/ASL*	3
	Cooperative Education 0890-299	Co-op
Third Year	Presentation Graphics 0890-320	4
	Technical Elective	3
	Construction Regulations 0890-375	3
	Capstone*	3
	Total Quarter Credit Hours	*106*

† 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

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 glass-working 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.

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 equivalent career exploration course is a prerequisite, as are the following:

English: Placement into level C English or above (nonfiction reading, academic writing, and literature). 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.
First Year	Engineering Fundamentals 0813-220	4
	Computing Tools for Engineering Technology 0890-212	4
	Foundations of Algebra 0884-180	4
	Nonfiction Reading III 0883-210	4
	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
	Writing III 0883-211	4
	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
	Analyzing Literature 0883-200	4
	Blueprint Reading 0813-239	2
	Wellness Education†	0

Second Year	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
	Choose one of the following technical electives	3
	Lens Design and Applications 0813-240	
	Physics I 0885-201	
	Geometric Dimensioning and Tolerancing 0890-260	
	Choose one of the following advanced technical electives:	3
	CNC Toolpaths 0813-257	
	Optical Testing 0813-242	
	Job Search Process 0806-101	2
	Communication Studies*	3
	Social Science*	3
	Deaf Studies/ASL*	3
	Cooperative Education 0813-299	Co-op
Third Year	*Choose one of the following manufacturing technical electives:*	6
	Automated Machining 0813-258	
	Precision Optics Manufacturing II 0813-245	
	Humanities*	3
	Employment Seminar 0806-201	1
	Capstone*	3
	Total Quarter Hour Credits	**106**

† 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.

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 level C English or higher (nonfiction reading, academic writing and literature). 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
Total Quarter Credit Hours	*18*

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
Total Quarter Credit Hours	*18*

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
Total Quarter Credit Hours	*18*

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
Total Quarter Credit Hours	*18*

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
Total Quarter Credit Hours	*6*

Digital imaging and publishing technology, AAS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	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
Third Year	DIPT Technical Concentration Course	3
	DIPT Technical Elective	3
	Deaf 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.
First Year	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 or above)	12
	Social Sciences*	3
	Wellness Education†	0
Second Year	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
Third Year	Technical Concentration Course	3
	Technical Elective	3
	Deaf 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.

**This program has been approved for discontinuance, effective June 2009. No new students will be admitted for the 2008-09 academic year.

Hospitality and Service Management

Mary Lou Basile, Chairperson

www.ntid.rit.edu/current/departments/business/

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 complimented 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 of science degree.

Hospitality and service management, AS degree, hotel and resort management concentration, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	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.
First Year	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
Second Year	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/

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, microbiology, 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 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 of 9.0 on the California Reading Test.

English—AOS: Placement into level C English or above (nonfiction reading, academic writing, and literature). Students successfully completing AOS degrees typically enter with reading scores equivalent to 8.0 on the California Reading Test.

Science: Typically, students entering this program will have completed at least two years of high school science.

Laboratory science technology, AAS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
Second Year	Laboratory Science Technology Lab Applications III, IV, V 0879-203, 204, 205	6
	Instrumentation I, II, III 0879-301, 302, 303	10
	Principles of Analytical Chemistry 0885-291	4
	Laboratory Math II 0884-232	3
	Deaf 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
Third Year	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.
First Year	Introduction to Laboratory Science Technology 0879-200	2
	Fundamentals of Cellular Biology 0885-215	4
	English (Level C or above)	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
Second Year	Laboratory Science Technology Lab Applications III, IV, V 0879-203, 204, 205	6
	Instrumentation 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 Studies/ASL*	3
	Cooperative Education 0879-299	Co-op
Third Year	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 is intended for people in the public or private sector who are interested in communicating effectively with deaf people in their communities. Classes in the certificate program provide a stimulating basic foundation in communicative and cultural competence in American Sign Language. The program is ideally suited as an introduction to American Sign Language and deaf culture for people who might be interested in subsequent course work in the fields of ASL-English Interpretation or deaf education.

Rochester, N.Y., has the highest per capita population of deaf and hard-of-hearing individuals in the United States. There are numerous educational and social resources for these individuals in the area, making NTID the ideal place to begin your study of American Sign Language.

The 16-credit curriculum is composed of the following courses. Although a primary emphasis in the curriculum is learning basic American Sign Language, students also deepen their understanding of deafness through courses related to the physical, psychological, social, and linguistic aspects of deafness. Substitution of one course for another generally is not permitted. Students must maintain a cumulative GPA of 2.0 for courses in the program in order to receive the certificate.

Course Title	Qtr. Cr. Hrs.
American Sign Language I, II, III 0876-211, 212, 213	6
American Sign Language IV, V 0876-311, 312	4
Aspects and Issues of Deafness I, II 0876-241, 242	6
Total Quarter Credit Hours	*16*

For advising or further information about this program, call (585) 4075-6809 (v/TTY) or (585) 475-6851 (TTY).
*** Admission to this program has been suspended for the 2008-09 academic year. ASL I, II, and III will continue to be offered.*

Deaf Studies/American Sign Language (ASL) Certificate

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 Studies (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
Total Quarter Credit Hours	*12*

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	
Total Quarter Credit Hours	*12*

Performing Arts Certificate

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.
Required Course	
0881-298 Performing Arts Practicum	3
Elective Courses–Please choose four of the following:	12
0881-256 Script Analysis	
0881-210 Acting I	
0881-260 Acting II	
0881-258 Introduction to Play Creating	
0881-168 Jazz	
0881-266 Ballet	
0881-267 Fundamentals of Choreography	
0881-202 History of Theater	
0881-204 Deaf Theater History	
0881-217 Stage Combat	
0881-218 Dance History	
0881-166 Sign Mime and Creative Movement	
0881-253 Arts Management	
0881-259 Creative Translation	
0881-261 Audition Technique	
0881-167 Dance Performance	
0881-257 Introduction to Dramatic Literature	
Total Quarter Credit Hours	*15*

Performing Arts Certificate–Technical Theater Emphasis

	Qtr. Cr. Hrs.
Required course	
0881-298 Performing Arts Practicum	3
Elective Courses–Please choose four of the following:	12
0881-256 Script Analysis	
0881-222 Scenic Technology I	
0881-223 Scenic Technology II	
0881-224 Scene Painting	
0881-231 Costume Technology I	
0881-232 Costume Technology II	
0881-233 Stage Make-up	
0881-241 Lighting Technology I	
0881-242 Lighting Technology II	
0881-253 Arts Management	
0881-272 Stage Management	
Total Quarter Credit Hours for certification	*15*

Prebaccalaureate Studies

Arts and Imaging Studies

Kenneth F. Hoffmann, Chairperson, Arts and Imaging Studies

Science and Mathematics

Vincent A. Daniele, Chairperson, Science and Mathematics

Engineering Studies

Dino Laury, Interim Chairperson, Engineering Studies

The prebaccalaureate 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 prebaccalaureate studies career exploration option.

Prebaccalaureate 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 prebaccalaureate 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 prebaccalaureate studies in arts and imaging studies will typically be required to have:

ACT minimum score of 18

English: Placement into the Writing Seminar (0502-227) course

Mathematics: Placement into 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 into level B science 0885-150 or higher for BFA degrees or level D, 0885-250 or higher, for BS degrees

Prebaccalaureate studies in the imaging arts and sciences in the Schools of Art, Design, and American Crafts, typical course sequence.

		Qtr. Cr. Hrs.
First	Visual Idea Development 0855-310	3
Year	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
	English/Liberal Arts*	12
	Freshman Seminar 0887-200	2
	Total Quarter Credit Hours	*44*

* Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).
Note: Portfolio of original artwork is required to determine admission. See the College of Imaging Arts and Sciences support coordinator for further information.

Prebaccalaureate studies in imaging arts and sciences in the School of Photographic Arts and Sciences, BFA degree, typical course sequence

		Qtr. Cr. Hrs.
First	Still Photography I, II 2060-257, 258	6
Year	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
	Digital Photography I 0855-323	3
	English/Liberal Arts*	12
	Freshman Seminar 0887-200	2
	Total Quarter Credit Hours	*44*

* Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).

Prebaccalaureate studies in imaging arts and sciences, biomedical photography option, typical course sequence

		Qtr. Cr. Hrs.
First Year	Still Photography I, II, III 2060-257, 258, 259	3-9
	Medical Terminology 1026-301	3
	Human Biology 1004-211	3
	Human Biology Lab 1004-231	1
	Liberal Arts*	12
	Total Quarter Credit Hours	*22-28*

* 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).

Prebaccalaureate studies in imaging arts and sciences in the School of Photographic Arts and Sciences, BS degree, typical course sequence

		Qtr. Cr. Hrs.
First Year	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
	English/Liberal Arts*	12
	Freshman Seminar 0887-200	2
	Total Quarter Credit Hours	*43*

* Please see Liberal Arts General Education Requirements for more information. Depending on placement, the writing sequence may begin with Written Communication I (0502-110), Written Communication II (0502-111), or Writing Seminar (0502-227).

Prebaccalaureate studies in imaging arts and sciences, film and video option, typical course sequence

		Qtr. Cr. Hrs.
First Year	*Choose one of the following:*	3-4
	Introduction to Portable Video 2065-243	
	Scriptwriting I 2065-342	
	Film Language 2065-222	2
	Theater Electives/NTID Performing Arts**	2–8
	Liberal Arts*	12
	Total Quarter Credit Hours	*19-26*

**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).

Prebaccalaureate studies in imaging arts and sciences in the School of Print Media, typical course sequence

		Qtr. Cr. Hrs.
First Year	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 0844-180	4
	Applications of Algebra 0884-210	4
	Choose one of the following:	4
	Explorations in College Algebra 0844-260	
	Algebra for Management Science 1016-225	
	Level D Science 0885-250 or higher	4
	English/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).

Science and Mathematics

Students entering prebaccalaureate 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 into Written Communication II (0502-111)

Mathematics: Placement into the NTID Advanced Mathematics (0885-275) course or higher

Prebaccalaureate studies in biology, biotechnology, medical sciences, environmental science, and environmental management, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Seminar 0853-200	2
	Prebaccalaureate 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*

Prebaccalaureate 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.

Prebaccalaureate studies in science, chemistry option, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Seminar 0853-200	2
	Prebaccalaureate courses#	2-5
	General and Analytical Chemistry I, II, III 1011-215, 216, 217	10
	Chemistry Labs 1011-205, 206, 227	3
	Choose one group of courses:	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*

Prebaccalaureate 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).

Prebaccalaureate studies in science, math or physics options, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Seminar 0853-200	2
	Prebaccalaureate courses#	2-5
	Choose one of the following science sequences:	12
	Chemical Principles I, II, III with Labs 1011-205, 206, 207	
	University Physics I, II, III 1017-311, 312, 313‡§	
	Choose one group of courses:	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*

Prebaccalaureate 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

Prebaccalaureate studies in engineering option, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Seminar 0853-200	2
	Prebaccalaureate 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*

\# Prebaccalaureate 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.

Prebaccalaureate studies in engineering technology option, typical course sequence

		Qtr. Cr. Hrs.
First Year	Freshman Seminar 0853-200	2
	Prebaccalaureate 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
	Precalculus for Engineering Technology‡	(4)
	Calculus for Engineering Technology I, II 1016-231, 232‡	8
	Total Quarter Credit Hours	*48-54*

\# Prebaccalaureate 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

Descriptions of all undergraduate courses offered at Rochester Institute of Technology are available on the RIT website at 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 successful 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

Under the university's revised curricular requirements (implemented September 1, 2005), 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 selects 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 todayís 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 1 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 (signatures of instructors/copy of certificate). A minimum of 16 hours of a previous activity is required. Formal requests should be submitted to Dugan Davies (Wellness Instructional Program), dnddhd@rit.edu, (585) 475-6232.

Intercollegiate Athletics: Students participating in the university's intercollegiate athletic programs will be granted wellness activity course credit for the season(s) of participation, but must still successfully complete First-Year Enrichment or Wellness for Life. 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 successfully complete First-Year Enrichment or Wellness for Life. The exemption will be granted only by a college dean, with input from the 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.

Prior Bachelor's Degree
Students who have acquired a prior bachelor's degree are exempt from the wellness education requirement.

Liberal arts concentrations and minors

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.

Minors

Liberal arts minors are for students who are looking for greater depth in the humanities and social sciences. Minors require the completion of **five** upper-level courses (20 quarter credit hours) in a designated liberal arts area. Liberal arts minors may be disciplinary or interdisciplinary, and some may require prerequisite course work. Students who choose this option will complete a total of 44 credit hours (or more) in the humanities and social sciences as part of their general education curriculum.

Almost all of RIT's colleges offer minors, including the College of Liberal Arts. Please see the Minors section of this bulletin for a complete list of minors and their requirements.

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.

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 1960's
0505-470	American Popular Song 1830-1950
0505-471	American Popular and Rock Music
0505-488	Special Topics in American Theater

* 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 present in detail various aspects of the American political system, which gives the student the tools to participate effectively in the political process.

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
0513-482	African-American Politics
0513-485	Politics Through Fiction
0513-514	Political Theory

Archaeology

Concentration Adviser: Bill 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 enrolled in the archaeology concentration 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.

Choose three courses from the following:

0531-444	Survey of Metallurgy
0531-445	Field Methods in Archaeology
0531-449	Special Topics in Material Culture Sciences: Archaeology of the Near East
0531-449	Special Topics in Material Culture Sciences: 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
0531-510	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.

Choose three of the following courses:

0505-421	Introduction to Museums and Collecting
0505-423	Technology of Inorganic Cultural Materials
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: American Architecture I, II, III
0505-504	Memory, Memorials, and Monuments
0505-467	American Film Since the 1960's
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	Art of Islam
0505-500	African American Art
0505-504	Memory, Memorials, and Monuments
0505-505	Art in Age of New Deal
0505-506	Museums of Art and Design
0505-507	Landscape Transformed

* *The only acceptable topics are: 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.

   Note: This concentration is closed to students enrolled in the professional and technical communication degree program and the advertising and public relations degree program.

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: John Klofas

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.

   Note: This concentration is closed to students enrolled in the criminal justice degree program.

Required Course:

0501-400	Criminology

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. Students will be required to take one ASL linguistics course and two culture courses.

Prerequisite: Proficiency in ASL is required for American Sign Language Literature (0525-595, 0504-400) and Structure of American Sign Language (0525-596). 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.

Choose one of the following linguistics courses:

| 0525-596 | Structure of American Sign Language |
| 0504-400/0525-595 | American Sign Language in Literature |

Choose two of the following culture courses:

0504-545	Deaf Literature
0507-463	American 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 economics analysis to a variety of study areas.

Note: The economics concentration is closed to students enrolled in the economic degree program.

Prerequisite:

| 0511-211 | Principles of Microeconomics |

Choose three of the following courses:

0511-402	Principles of Macroeconomics**
0511-440	Urban Economics
0511-441	Economics of Human Resources
0511-442	Contemporary International Economic Problems
0511-443	Current American Macroeconomics Problems
0511-444	Public Finance
0511-445	Survey of Economic Thought
0511-448	Economics of Less Developed Countries
0511-450	Benefit-Cost Analysis
0511-452	Monetary Analysis and Policy
0511-453	Intermediate Microeconomics 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
0511-464	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
0511-457*	Applied Econometrics
0511-458*	Economic Forecasting
0511-460*	Mathematical Methods: 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.

Choose three of the following courses:

0521-451	Environmental Policy
0507-464	Environmental Disasters in American History
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
0508-540**	Science and Technology Policy Seminar
0511-481***	Environmental Economics

†*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. Thus this concentration is closed to students with substantial transfer credit in a language or significant prior knowledge of a language.

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.

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. *Note: This concentration is closed to native speakers. Evening students may not declare this concentration.*

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:
0507-442	Contemporary Middle East
0510-484	Islamic Culture/Middle East
0505-487*	Art of Islam Special Topics
0535-520	Intercultural Communication

* *The only acceptable topics are: Persian, Turkish/Mughal Traditions, and Arabic Tradition.*

American Sign Language (ASL)

Concentration Adviser: J. Matt Searls

Prerequisite: Beginning American Sign Language I (0525-390). American Sign Language students with some proficiency must see Professor Searls for proper placement. *Note: This concentration is closed to native or fluent users of American Sign Language. Evening students may not declare this concentration.*

Required Courses:
| 0525-391 | American Sign Language II |
| 0525-392 | American Sign Language III |

Electives—Choose one of the following:
0515-529	Deaf Culture in America
0504-545	Deaf Literature
0507-463	American Deaf History
0525-595	American Sign Language Literature

Chinese Language/Culture

Concentration Adviser: Hiroko Yamashita

Prerequisite: Beginning Chinese I (0525-420) or equivalent. All students beginning the study of Chinese must see Professor Yamashita for screening. Students with some proficiency will be placed according to that proficiency. *Note: This concentration is closed to native speakers. Evening students may not declare this concentration.*

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:
0513-441	Politics in China
0504-447	Special Topics
0505-469	Art of China, Korea, and Japan
0505-481	Oriental Art
0507-485	Foundations of Asian Civilizations
0507-486	20th Century China and Japan
0507-487	Communist China
0513-496	Government and Politics in East Asia

French Language/Culture

Concentration Adviser: Philippe Chavasse

Prerequisite: Beginning French I (0525-440) or equivalent. Students with some proficiency must see the foreign language chair (Professor Yamashita) for proper placement. *Note: This concentration is closed to native speakers. Evening students may not declare this concentration.*

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

Electives—Choose one from the following:

0503-512	Tocqueville and America
0525-459	French Films/American Remakes
0504-510	The View from Paris
0535-520	Intercultural Communication

German Language/Culture

Concentration Adviser: Wilma Wierenga

Prerequisite: Beginning German I (0525-460) or equivalent. Students with some proficiency must see Professor Wierenga for proper placement. *Note: This concentration is closed to native speakers. Evening students may not declare this concentration.*

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:

0505-459	Era of Haydn and Mozart
0505-465	Special Topics: Mozart's Operas
0503-477*	Contemporary German Culture
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. Students with some proficiency must see Professor D'Amanda for proper placement. *Note: This concentration is closed to native speakers. Evening students may not declare this concentration.*

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:

0505-433	15th Century Art and Architecture of Florence and Rome
0505-434	16th Century Art and Architecture of Florence and Rome
0504-477	Survey of Italian Literature
0504-491	Modern Italian Poetry
0504-500	Italian Literature: Special Topics

Japanese Language/Culture

Concentration Adviser: Hiroko Yamashita

Prerequisite: Beginning Japanese I (0525-480) or equivalent. Students with some proficiency must see the Japanese instructor, Professor Yamashita, for proper placement. *Note: This concentration is closed to native speakers. Evening students may not declare this concentration.*

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
0505-481	Oriental Art
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. *Note: This concentration is closed to native speakers. Evening students may not declare this concentration.*

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:
0504-456	Dostoevsky
0504-457	Tolstoy
0507-448	History of Russia to 1917
0507-449	History of Russia Since 1917
0513-443	Politics of Russia and the Newly Independent States
0513-444	The Cold War and Beyond
0505-435	Russian Art 10th through 20th Century
0505-452	Special Topics: Russian Art I
0505-452	Special Topics: Russian Art II

Spanish Language/Culture

Concentration Adviser: Diane Forbes

Prerequisite: Beginning Spanish I (0525-560) or equivalent. Students with some proficiency must see the Spanish instructor, Professor Forbes, for proper placement. *Note: This concentration is closed to native speakers. Evening students may not declare this concentration.*

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:
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
0525-578	Women in the Hispanic World: Politics of Identity Formation

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 the 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.*

Prerequisites–Choose one of the following:
0511-211	Principles of Microeconomics (or equivalent)
0513-211	American Politics
0513-214	Introduction to International Relations (or equivalent)

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

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 more depth in a more restricted field of study.

Choose three of the following courses:
0507-401	American Women: Colonies to 1848
0507-402	American Women: 1848 to Now
0507-410	Terrorism, Intelligence, and War

0507-411	Origins of U.S. Foreign Relations
0507-412	Modern Japan in History, Fiction, and Film
0507-440	U.S. Social and Intellectual History
0507-441	Modern U.S. Foreign Relations
0507-442	Contemporary Middle East
0507-443	European Social and Intellectual History Since 1600
0507-444	Strategy and Diplomacy of Europe
0507-445	Modern Latin 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: Europe of the Dictators
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	American Disability History
0507-468	The United States and Japan
0507-470	European Union and America in 21st Century
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
0507-492	Selected Problems in Black History
0507-494	Immigration and Ethnicity
0507-495	The Civil Rights Movement in 20th Century U.S. History
0507-496	African History
0507-497	Biography in/as History

International Relations

Concentration Advisers: Edward Kannyo and Spencer Meredith

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.

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
0513-444	The Cold War and Beyond
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
0513-495	Revolutions and Political Change
0513-496	Government and Politics in East Asia

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.*

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
0525-543	Women in the Hispanic World: Politics of Identity Formation

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.

0525-490	Beginning Spanish II
0525-491	Beginning Spanish III
0525-492	Intermediate Spanish I
0525-493	Intermediate Spanish II
0525-494	Intermediate Spanish III
0525-496	Advanced Spanish I
0525-497	Advanced Spanish II
0525-502	Advanced Spanish III
0525-532	Beginning Portuguese II
0525-533	Beginning Portuguese III
0525-534	Intermediate Portuguese I
0525-535	Intermediate Portuguese II
0525-536	Intermediate Portuguese III
0525-537	Advanced Portuguese I
0525-538	Advanced Portuguese II

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)

Choose three of the following courses:

0504-400	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
0504-450	Ibsen: Family and Society
0504-454	Shakespeare: Tragedy/Romance
0504-455	Shakespeare: Comedy/History
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	Latino Experience in Literature
0504-480	Women in Literature
0504-484	Literature and Religion
0504-490	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

Material Cultural Studies

Concentration Adviser: Bill 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.

Choose three courses from the following:

0531-441	GIS Applications
0531-444	Survey of Metallurgy
0531-445	Field Methods in Archaeology
0531-446	Native North Americans
0531-508	Archaeology of Cities
0531-507	Archaeological Science Lab
0533-437	The Forensic Investigation of Art
0533-438	Conservation of Cultural Material

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
0504-466*	Early Black Writers
0504-467*	Black Writers Today
0507-492	Selected Problems in Black History
0507-494	Immigration and Ethnicity
0507-495	Civil Rights Movement in 20th Century U.S. History
0507-496	African History
0515-506	Social Inequality
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. *Note: Evening students may not declare this concentration.*

Choose three of the following courses:

0505-401*	RIT Singers
0505-402*	RIT Philharmonia
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: Bill 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.

Prerequisite: None

Choose three courses of the following courses:

0531-441	GIS Applications in Urban and Community Studies
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:
0509-445   Social and Political Philosophy
0509-446   Philosophy of Law
0509-448   The Philosophy of Peace
0513-453   American Foreign Policy
0513-491   The Middle East Peace Process
0535-490   Persuasion and Social Change

Philosophy

Concentration Adviser: David Suits

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.

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
* 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: Two prior courses in philosophy or permission of the instructor
† Topics will vary.

Psychology

Concentration Adviser: Kathleen Chen

This concentration provides the opportunity for advanced study in various areas of psychology. Depending on which courses are selected, students may conduct in-depth study of one of the major areas of the discipline such as human development, normal and abnormal personality, or perception and learning. The courses will enable students to learn more about their own and others' functioning. Students will become well-informed consumers of psychological information and also will learn to apply psychological principles in their own lives. *Note: This concentration is closed to students enrolled in the psychology degree 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
0514-544   History and Systems
* Students may use these courses toward a concentration or minor with the permission of the instructor.

Public Policy

Concentration Adviser: James J. Winebrake

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. Reflecting the interdisciplin-

ary nature of policy studies, additional courses are offered from the areas of sociology; political science; and science, technology, and society. In addition, Policy Analysis I, II, and III (0521-402, 403, 404) are offered especially for students who are considering the master of science in science, technology, and public policy or who have an interest in analytical tools.

Required course:
0521-400   Foundations of Public Policy

Choose two 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*   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.

Choose three of the following courses:
0504-484*   Literature and Religion
0505-468   Art of India and Southeast Asia
0505-481   Oriental Art
0505-487   Art of Islam
0507-483   History of Christianity
0509-440   Philosophy of Religion
0509-460   East Asian Philosophy
0509-466**   Existentialism
0509-467   Medieval Philosophy
0509-469**   19th Century Philosophy
0510-483   Anthropology of Religion
0513-492   Religion and International Politics
0514-483   Social Psychology of Religion

*   Prerequisite: Writing (0502-227)
** Student must obtain the approval of the religious studies concentration adviser

Science and Technology Studies

Concentration Adviser: Thomas Cornell

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; have made possible increasing freedom, a fantastic variety of choice, and, paradoxically, a 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.

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
0508-540   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 Ferber

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:
0515-210   Foundations of Sociology (or equivalent)
0510-210   Cultural Anthropology (or equivalent)

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
0510-454   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
0510-502   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.

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
0505-489   Theater Production Seminar and Workshop
0505-502   Shakespeare the Dramatist

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.

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
0522-446*   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
0522-480*	Women and the Visual Arts
0522-481*	Women in Literature
0522-482*	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

* These courses may require prerequisites. Please check the Course Descriptions Booklet.

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. Course topics include technical and scientific writing, principles of written argumentation, writing for the majors, English language studies, autobiography, and oral history. Writing processes and language awareness from academic to public forums receive close attention.

Prerequisite:

| 0502-227 | Writing (or equivalent) |

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: Autobiography and Oral History
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

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
0101-431	Cost Accounting
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

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.

Required Courses:
0513-451	The Legislative Process
0513-452	The American Presidency
0513-456	Judicial Process

Electives—Choose two of the following courses:
0508-484	Environmental Policy
0513-449	Special Topics in Political Science
0513-450	State and Local Politics
0513-453	American Foreign Policy
0513-454	Political Parties and Voting
0513-455	Politics and Public Policy
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 Imaging Systems

Minor Adviser: Nitin Sampat

The minor in applied imaging systems offers students an introduction to the business and technology of photographic imaging, primarily as it relates to image output and lab operations.

A minor in applied imaging systems requires the student to take a total of 20 credit hours. 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. Topics are taught from an applied, hands-on perspective. Lab assignments are an integral part of the curriculum, and students will work with a variety of imaging instruments and output devices.

All matriculated RIT undergraduate students are eligible to apply for the minor. Majors within CIAS seeking this minor can substitute courses they already have taken as part of their major (up to a maximum of eight credit hours, assessed on a course-by-course basis in consultation with the minor coordinator).

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:
2068-411	Imaging Systems
2068-412	Color Management for Photographers
2068-413	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.*

Archaeological Science

Minor Adviser: Dr. 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 culture 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	Geographic Information Systems Applications in Urban and Community Studies
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 courses from each list:
College of Liberal Arts
0505-421	Introduction to Museums and Collecting
0505-422	Technology of Organic Cultural Materials
0505-423	Technology of Inorganic Materials
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 Sixties
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	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

College of Imaging Arts and Sciences:
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	Twentieth 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
2039-425	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

2039-443	Art and Technology
2039-450	Pop Art and Pop Culture
2039-452	Art and Activism
2039-459	Art of Central Italy 1250-1400
2039-553	Special Topics*
2039-469	Baroque Rome

* *Only the following topics are acceptable for Special Topics (2039-553): Gothic Art in Europe, Russian Art, Scandinavian Arts, Arts and Crafts Movement, Castles and Cathedrals, Global Visual Culture, Streamlining America, The Gothic Revival, Displaying Gender, The Russian Avant Garde 1850-1960, and Passion for Porcelain.*

** *Only the following topics are acceptable for Special Topics (0505-452): Queer Looks, Traumatic Images, and American Architecture.*

† *Only the following topics are acceptable for Art of Islam (0505-487): Persian, Turkish/Mughal Traditions, and Arabic Tradition.*

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 RIT undergraduate students from outside the E. Philip Saunders College of Business who are interested in broad exposure to the world of business. Students interested in pursuing an MBA degree also may use this minor program 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. Students must meet the prerequisites for any courses they select. Those interested in using this minor program to waive certain MBA foundation courses can obtain further detailed information by consulting the minor adviser or the Saunders College of Business graduate adviser.

Communication

Minor Adviser: Grant Cos

This minor provides a foundation in spoken, written, and visual communication skills and theories through four tracks: applied communication, mass media, communication and culture, and advertising and public relations. This minor is closed to students enrolled in the professional and technical communication degree program and the advertising and public relations degree program.

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 courses from one of the following tracks:

Applied communication track
0502-444	Technical Writing
0535-411	Health Communication
0535-416	Newswriting

0535-415	Organizational Communication
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

Mass media communication track

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

Communication and culture track

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
0535-484	Rhetoric of Race Relations
0535-490	Persuasion and Social Change
0535-520	Intercultural Communication

Advertising and public relations track

0535-421	Public Relations
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

Computer Science

Minor Adviser: Henry A. Etlinger

The computer science minor is designed to achieve two basic goals. First, students will acquire a foundation in basic programming fundamentals with an emphasis on modern programming practices. Second, the minor will provide an opportunity for students to expand their programming foundation by either 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 RIT's department of computer science. At least 12 quarter credit hours must be courses not required by a student's home department.

Prerequisites: None

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
4003-580	Language Processors
4003-590	Seminar in Computer Science

Construction Management

Minor Adviser: Abi Aghayere

The construction management minor broadens students' learning experiences and professional opportunities. The minor's curriculum offers broadly based courses covering many aspects of construction management, including building construction, cost estimating, construction project management, and construction safety. Students have flexibility in their choice of electives, allowing them 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 five of the following courses:

Group A: 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

Group B: 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: John Klofas

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.

Required Course:

0501-400	Criminology

Electives—Choose two of the following courses:

0501-441	Corrections
0501-444	Concepts in Criminal Law
0501-443	Law Enforcement in Society
0501-456	Courts
0501-406	Technology in Criminal Justice

Also choose two of the following courses:

0501-405*	Major Issues in the Criminal Justice System
0501-415	Domestic Violence
0501-440	Juvenile Justice
0501-445	Minority Groups and the Criminal Justice System
0501-446	Women and Crime
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

Economics

Minor Advisers: Michael Vernarelli and Jeffrey Wagner

An economics minor provides a systemic 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.

Prerequisite:

0511-211	Principles of Microeconomics

Required Course:

0511-402	Principles of Macroeconomics

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
0511-450	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

Engineering

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
* 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.

**Mathematics—Choose one of the following sequences of courses*:*
1016-283 Project-Based Calculus III or equivalent
1016-306 Differential Equations
or
1016-232 Calculus for Engineering Technology II
1016-304 Differential Equations for Technology

Required Courses:
0309-230 Chemical Process Analysis**
0309-340 Reaction Engineering I
0309-330 Mass Transfer Operations
0309-381 Chemical Engineering Systems Analysis Paper
**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).*

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:
1016-281 Project-based Calculus I (or
or
1016-272 Calculus B
or
1016-265 Discrete Math I)
4003-232 Computer Science II or equivalent

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

Electrical Engineering
Minor Adviser: Vincent Amuso

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.*

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, operation 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.*

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 II

Required Courses:

0304-336   Statics
0304-347   Mechanics of Materials
0304-413   Thermodynamics
0304-415   Fluid Mechanics

Electives—Choose one of the following, or any 600-level mechanical engineering technical elective (must meet prerequisites):

0304-344   Materials Science
0304-359   Dynamics
0304-437   Design of Machine Elements
0304-514   Heat Transfer

Microelectronics and Nanofabrication

Minor Adviser: Michael Jackson

This minor is designed to provide basic knowledge of microelectronics and nanofabrication to nonmicroelectronic 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.*

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

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 students with 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 on sustainability and holistic thinking. In particular, a required 500-level seminar will serve as a capstone experience, helping students to integrate knowledge from several disciplinary perspectives, including socio-cultural, historical, political, economic, ethical, scientific, and/or technological factors. Having completed the minor, students will possess a high level of environmental literacy, an important component of many professional fields within the sciences, engineering, law, journalism, and public affairs.

Required Course:
0508-570   Environmental Studies Seminar

Electives—Choose four of the following courses:
0508-460   Environment and Society
0508-463   Great Lakes I
0508-464*   Great Lakes II
0508-482   Energy and the Environment
0508-483   Environmental Values
0508-484   Environmental Policy
0508-487   Special Topics: Environmental Studies
0508-488   History of Ecology and Environmentalism
0508-489   History of the Environmental Sciences
0508-490   Biodiversity and Society
0508-491   Sustainable Communities
0508-582   Seminar in Science, Technology, and
            the Environment
0509-453   Environmental Philosophy
0510-449   Sustainable Development
0511-481** Environmental Economics
0511-484** Natural Resource Economics
0515-449†   Population and Society

\#   This course can be taken only if the student has already taken at least two courses from the
      electives list.
      Typically this course would be the last course taken in the minor sequence.
*   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.

Exercise Science

Minor Adviser: Richard Doolittle

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
0104-220   Personal Financial Management
0104-350   Corporate Finance
0104-453   Intermediate Investments

Electives—Choose one of the following courses:
0104-361   Financial Institutions and Markets
0104-452   Managing Corporate Assets and Liabilities
0104-504   Finance in a Global Environment
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—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
0525-406   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:
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:
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:
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:
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: Hiroko Yamashita

Prerequisite:
0525-480   Beginning Japanese I

Required 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:
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:
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 at RIT 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
0525-404   Intermediate Arabic II
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
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
0503-477*   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
0525-479   Special Topics in German
Contemporary German Culture (0503-477) 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

0504-477	Survey of Italian Literature
0505-433	15th Century Art and Architecture of Florence and Rome
0505-434	16th Century Art and Architecture of Florence and Rome
0504-491	Modern Italian Poetry
0504-500	Topics in Italian Literature

Japanese Language/Culture

Minor Adviser: Hiroko Yamashita

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

0505-469	Art of China, Korea, and Japan
0505-481	Oriental Art
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
0525-496	Structure of Japanese Language
0525-497	Languages in Japanese Society

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
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

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
0525-543	Women in the Hispanic World: Politics of Identity Formation
0525-579	Special Topics in Spanish

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 towards 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 fulfill four prerequisites before registering for the required courses below.

I. Choose one three-course programming sequence from the following*:

4002-217, 218, 219	Programming for Information Technology
4003-231, 232, 233	Computer Science 1, 2, 3 (RAPT)

4002-230, 231, 414   Programming for New Media
4003-231, 232, 233   Computer Science 1, 2, 3

II. Choose one introductory course in Web and multimedia topics:
4002-320   Introduction to Multimedia
4002-206   Web Foundations

III. Choose one two-course discrete mathematics sequence:
1016-205, 206   Discrete Math for Technologists I, II
1016-265, 366   Discrete Mathematics I, II

IV. Choose one two-course physics sequence:
1017-211, 212   College Physics I, II
1017-311, 312   University Physics I, II

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

*   Other sequences may be appropriate; students are encouraged to contact the minor adviser for more information.

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: Europe of the Dictators
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: Europe of the Dictators
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

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 course:

| 0508-520 | Historical Perspectives on Science and Technology Seminar |

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

Human Resource Management

Minor Advisers: Jon Horne and Carol Whitlock

The human resource management minor allows students to integrate their primary academic interest in the arts, business, engineering, or the sciences with information that deals directly with the social, corporate, or legal constraints of workforce management. It provides students with the ability to market themselves as knowledgeable human resource managers in preparation for future leadership or management roles.

The curriculum offers broadly based courses covering many aspects of the field such as 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 I
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
1014-730	Magnetic Resonance Imaging
1051-xxx	Physics and Engineering of Medical Imaging Systems
1051-xxx	Ultrasound

Industrial Environmental Management

Minor Adviser: Abi Aghayere

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. The minor's choice of electives is flexible, allowing students to individualize the curriculum to match their interests. 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 who minor 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:
0513-488   War and the State
0513-487   International Law and Organization

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
0513-444   The Cold War and Beyond
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
0513-495   Revolutions and Political Change
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. (Note: This minor is closed to students enrolled in the professional and technical communication and the advertising and public relations degree programs.)

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 way 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.

Requirements:
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 in the Criminal Justice System: Comparative Criminal Law
0501-405	Major Issues: Victimless Crime
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
0513-514	Political Theory
0513-463	First Amendment, Liberty, and Deliberative Democracy
0515- 509	Social Policy
0535-448	Rhetoric of Free Speech

Group B: Operations and Impacts of Law
0501-402	Crime, Justice, and Social Diversity
0501-405	Major Issues in the Criminal Justice System: Seminar in Law
0501-405	Major Issues: Fundamentals of Legal Research I
0501-405	Major Issues: Cyberlaw
0501-405	Major Issues in Prosecution
0501-405	Major Issues: Federal Crime and Justice
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

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

* *Acceptable topics for Special Topics (0504-447) are available at www.rit.edu/~langlit/lang.html.*

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:

0102-250*	World of Business
0102-438	Business Ethics
0102-455	Human Resources Management
0102-460	Leadership in Organizations
0102-462	Management and Career Development
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 at RIT and increase their capacity to analyze, design, and manage business processes related to their major.

Required Courses:

0112-315	Business Information Systems Processes
0112-340	Database Management Systems
0112-370	Systems Analysis and Design

Electives—Choose two of the following courses:

0112-330	Business Programming
0112-380	Network Technologies
0112-405	Object-Oriented Business Programming
0112-410	Object-Oriented Analysis and Design
0112-430	Web Systems Development
0112-440	Database Systems Development
0112-450	Enterprise Management
0112-460	Software Quality and Testing

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
0105-505	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 a Global Environment

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
1016-571	Topology I
1016-572	Topology II

Military Studies and Leadership

Minor Advisers: Lt. Col. David Easley and Lt. Col. Lynn Lubiak

The minor in military studies and leadership is offered through the departments of aerospace studies (Air Force ROTC) and military science (Army ROTC). This minor provides RIT students the opportunity to learn about military officer training and their mission to develop leaders for tomorrow's Armed Forces. The aerospace studies and military science departments accomplish this through a series of courses promoting 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

* *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 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:

0505-485	Music Theory II
0505-461	World Music I
0505-462	World Music II

Networking and Systems Administration

Minor Adviser: Sylvia Perez-Hardy

The minor in networking and systems 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 Adviser: Zoran Ninkov

This minor provides students 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 (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 may be 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

The packaging science minor is flexible so students may individualize the minor to their interests based on the type of electives chosen. This minor will broaden the learning experiences and professional opportunities of non-packaging majors by creating a second focus in packaging. 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 broadly based courses covering every aspect of packaging, including development/design, testing, marketing, and production. Related legal, economic, and environmental concerns are also addressed. Undergraduate students who have enough free and/or elective credit hours to complete the minor in a field different from their major are eligible.

Required Courses:*
0607-502   Packaging Materials
0607-503   Packaging Container Systems
0607-504   Concept to Consumer

*   *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.*

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 upper-level elective courses in the packaging science program.*

Philosophy

Minor Adviser: David Suits

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. The philosophy minor consists of five upper-level philosophy courses.

Choose one of the variable-topic courses below:
0509-444   Great Thinkers
0509-449   Special Topics
0509-450†   Seminar in Philosophy

Choose four of the fixed-topic courses below:
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
0509-450†   Seminar in Philosophy
0509-451   Professional Ethics
0509-452   Philosophy of Technology
0509-453   Environmental Philosophy
0509-454*   Feminist Theory
0509-455   Theories of Knowledge
0509-456   Ancient Philosophy
0509-457   Modern Philosophy
0509-458   Philosophy of Mind
0509-459   Philosophy of the Social Sciences
0509-460   East Asian Philosophy
0509-461   American Philosophy
0509-462   Contemporary Philosophy
0509-464   Philosophy of Action
0509-465*   Critical Theory
0509-466   Existentialism
0509-467   Medieval Philosophy
0509-468*   Metaphysics
0509-469**   19th Century Philosophy
0509-470*   Philosophy and Literary Theory
0509-471*   Philosophy of Film
0509-472   Minds and Machines
0509-473   Technology and Embodiment
0509-474*   Philosophy of Language
0509-475*   Philosophy of Vision/Imaging
0509-476   Ethical Theory

†   *Prerequisite: Two prior courses in philosophy or permission of 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 importantly, the political science minor seeks to help students make sense of the increasingly complicated political environment that confronts them in their role as citizens.

The courses in this minor are drawn from those in the American politics and international relations minors. Students may select three courses from the American politics minor and two from the international relations minor, or vice versa.

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
0513-444	The Cold War and Beyond
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
0513-495	Revolutions and Political Change
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: Barb Birkett

The purpose of the printing media minor is to introduce publishing to undergraduate students outside of the School of Print Media. Students may customize the minor by specializing in the following areas: advertising and media strategy, contemporary publishing, digital imaging and premedia, and print production, or they 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 bulletin.

Advertising and Media Strategy

2082-367	Media Industry Analysis
2083-201	New Media Perspectives
2083-323	Multimedia Strategies
2082-313	Media Distribution and Transmission
2083-402	Media Law
2083-416	Media Business Basics

Contemporary Publishing
2083-216	Digital Foundations
2083-217	Typography and Page Design
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
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
2082-378	Finishing and Digital Imposition
2083-402	Media Law

Print Production
2082-401	Digital Print Process
2081-367	Lithographic Process
2081-364	Flexographic Process
2081-386	Gravure Process
2081-458	Ink Chemistry and Formulation
2082-387	Substrates for Printing
2082-407	Color Management Systems
2082-378	Finishing and Digital Imposition
2082-413	Operations Management

Psychology

Minor Adviser: Kathleen Chen

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
0514-443	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
0514-544	History and Systems of Psychology

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
0521-460	Capstone: Public Policy Minor

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
0521-406	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 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:
0508-582   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
0508-500   Science, Technology, and Society Classics
0515-451   Transfer Technology and Globalization
0508-460   Environment and Society
0508-483   Environmental Values
0508-490   Biodiversity and Society
*Topics will vary.

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 Courses:
0508-540   Science and Technology Policy Seminar
Plus, at least one of the following 400-level courses:
0508-447   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
0508-582   Seminar in Science, Technology, and
            the Environment
0521-408   Technological Innovation and Public Policy
0521-410   Information and Communication Policy
0521-449   Special Topics in Public 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 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:
0502-460   Science Writing
0502-456   Rhetoric of Science
0502-462   Advanced Science Writing

Electives—Choose two of the following courses:
0502-459   Creative Nonfiction
0502-560   Special Topics in Writing
0504-448   Biographical Literature: Lives of Scientists
0504-462   Literature and Technology
0502-449   Worlds of Writing
0522-405   Women and Science
0504-482   Science Fiction

Service Management

Minor Advisers: Carol Whitlock and Jayne Downes

All industries and entrepreneurial businesses interface with customers, and knowing how to provide excellent customer service is essential to businesses of all types. 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 Ferber

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. The courses offered by the minor 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:

0510-210	Cultural Anthropology
or	
0515-210	Foundations of Sociology

Electives—Choose five of the following courses:

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 I
1016-353	Applied Statistics II
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: Abi Aghayere

The structural design minor broadens students' learning experiences and professional opportunities by creating a focus in structural design and an analysis of steel, concrete, and wood. The minor also explores building codes as they relate to design. The choice of electives is flexible, allowing students to individualize the minor to their interests.

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. The minor curriculum offers courses covering many aspects of structural design and analysis.

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

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
0614-565	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. The course offerings are grouped into two categories, Theater and the Times and Theater Praxis. 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 a minimum of two and a maximum of four of the following Theatre 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
0505-488	Special Topics: Theater Arts

Choose no more than two of the following drama and theater-related elective courses:

0505-447	American Musical Theater
0505-446	American Film of the Studio Era

0505-467	American Film Since the Sixties
0504-440	Drama and Theater
0504-450	Ibsen: Family and Society
0504-454	Shakespeare: Tragedy/Romance
0504-455	Shakespeare: Comedy/History
0505-488	Special Topics: Drama and Theater-Related

Theater Praxis

| 0505-XXX | Special Topics: Theater Praxis |

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.

Requirements: The women's and gender studies minor requires five upper-level courses, which include the foundations course and four electives. The electives may be chosen from the list below. Only one course from the affiliated list can be used for credit toward the minor.

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
0522-446	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
0522-480	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:

0505-446	American Film in the Studio Era
0504-455	Shakespeare: Comedies and Histories
0504-467	Black Writers Today

Writing Studies

Minor Advisers: Elizabeth Mazzolini

The writing studies minor is a useful complement to any RIT major. The 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 writing studies minor accommodates students with a wide variety of writing interests, disciplinary majors, and professional goals.

Prerequisite:

| 0502-227 | Writing (or equivalent) |

Required 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 |

Electives*—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

* *Students may not use the same course as both a requirement and an elective.*

Academic Enrichment

Experiential learning

www.rit.edu/co-op/careers
(585) 475-2301 (voice), (585) 475-6905 (TTY)

At RIT, students earn an outstanding education. But to 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 is 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 goabroad@rit.edu; website http://studyabroad.rit.edu.

Undergraduate research

www.rit.edu/research.php

As the role of research and innovation continues to expand, the importance of participating in creative projects and faculty-guided research gains in value. RIT recognizes that many of the best careers require strong research skills, and many of our undergraduate students find opportunities to apply their knowledge in all kinds of fields.

Undergraduate research can involve any number of opportunities, such as:
- working on an original research project in collaboration with a faculty member, or a project sponsored and funded by industry;
- writing or co-writing an academic essay;
- conducting market research, a scientific experiment, or an engineering project; or
- facilitating applied research in a corporate or industrial setting.

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 honors general education 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; 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 Safety Technology/MS in Environmental Health and Safety Management
BS in Environmental Technology/MS in Environmental Health and Safety Management
BS in Computer Engineering Technology/MS in Computer Science
BS/MS in Telecommunications Engineering Technology
BS/MS in Electrical Mechanical Systems Integration
BS/MS in Mechanical Systems Integration
BS/MS in Manufacturing Systems Integration

B. Thomas Golisano College of Computing and Information Sciences
BS in Medical Informatics/MS in Computer Science

Kate Gleason College of Engineering
BS/MS in 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/MS in Industrial Engineering
BS/ME in Industrial Engineering
BS in Industrial Engineering/ME in Engineering Management
BS in Industrial Engineering/ME in Systems Engineering
BS in Industrial Engineering/MS in Applied and Mathematical Statistics
BS in Microelectronic Engineering/MS in Material Science
BS/MS in Mechanical Engineering
BS/ME in Mechanical Engineering
BS in Mechanical Engineering/MS in Public Policy
BS/MS in Applied Statistics
BS/MS in Applied and Mathematical Statistics

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 Bioinformatics
BS/MS in Environmental Science
BS/MS in Chemistry
BS in Biochemistry/MS in Chemistry
BS in Chemistry/MS in Materials Science and Engineering
BS in Polymer Chemistry/MS in Chemistry
BS in Medical Informatics/MS in Computer Science
BS in Chemistry/MS in Materials Science and Engineering
BS in Physics/MS in Materials Science and Engineering
BS in Applied Statistics/MS in Applied Mathematics
BS/MS in Applied Mathematics
BS in Computational Mathematics/MS in Computer Science
BS in Computational Mathematics/MS in Applied Mathematics

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 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
- Roberts Wesleyan College
- Rochester Institute of Technology
- St. Bernard's Institute
- St. John Fisher College
- State University of New York at Alfred
- State University of New York at Brockport
- State University of New York at Geneseo
- University of Rochester

Students must meet the following criteria in order to enroll as an intercollegiate student:

1. The requested course is not available at the home school.
2. The student is a full-time (12 credit hours or more) matriculated undergraduate student at their 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 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 ìlegitimate need to knowî (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: www.rit.edu/~620www/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 use a touch-tone telephone, the World Wide Web, fax machine, mail, or register in person at their home department or the Office of the Registrar. 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
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 covering 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
(585) 475-6682

The Academic Support Center provides academic assistance to students, faculty, and staff. The center offers drop-in services for mathematics/physics and writing support for all levels of students, from freshmen to graduates. In addition to skill development, the 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 (however, LSS services are fee-based) to RIT students.

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.

Learning Support Services: Learning Support Services (LSS) 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 speed reading. 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, the Lunch 'n Learning series, offered each quarter. Topics include 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 the Learning Power Online website at www.rit.edu/lponline.

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.

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
(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 the 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 resumes, 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 also is 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
(585) 475-2261 (voice), (585) 475-6897 (TTY)

The Counseling Center, located in the August Center, offers a variety of services to hearing, deaf, and hard-of-hearing students. Services include personal/psychological counseling, crisis intervention, career exploration counseling, career exploration resources, DISCOVER (computer-assisted career guidance), developmental programs and groups, testing, consultation, and referral.

RIT Counseling Center hours: Counseling Center hours are 8:30 a.m. to 4:30 p.m., Monday, Tuesday, and Friday, and 8:30 a.m. to 7 p.m., Wednesday and Thursday, except during finals week, break weeks, and summer quarter. During those periods, the hours are 8:30 a.m. to 4:30 p.m., Monday through Friday. Services are confidential and free. For more information, please call (585) 475-2261 (voice) or (585) 475-6897 (TTY) or visit the Counseling Center website at www.rit.edu/counseling.

Personal/psychological counseling: Individual and group counseling are available for students to deal with things like depression and anxiety, more effective ways of dealing with conflict and stress, managing feelings and emotions, developing satisfying relationships, communicating with others, and coping with personal crises, to name a few.

Crisis intervention: Crisis counseling and emergency services may be obtained by calling or visiting the Counseling Center during business hours or by calling Public Safety at (585) 475-3333 and asking to speak to the counselor on call after hours.

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.

Groups and outreach programs: The Counseling Center staff offers groups that assist students in their personal development. These groups provide a supportive environment in which to explore a variety of issues that typically affect the lives of students such as forming relationships, handling loss, managing stress, clarifying values, and choosing careers.

In addition, center staff members present special programs to student groups and organizations. Presentation topics include communication skills, helping friends get help, stress management, and dealing with loss, among others.

Testing: The Counseling Center may administer a number of psychological tests and interest inventories as part of the counseling process.

Consultation: Staff members provide consultation services to interested students, faculty, and staff regarding student problems and a number of other areas within their scope of expertise.

Referral services: Staff can assist with referrals to community-based practitioners and resources, when appropriate.

Disability Services

www.rit.edu/dso
(585) 475-7804 (voice/TTY)
(585) 475-6988 (voice/TTY)

RIT is committed to providing students and faculty/staff with disabilities-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 must 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 coordinator will: 1) review the student's requests for accommodations; 2) assess the student's documentation; 3) recommend appropriate and reasonable accommodations, if needed; and 4) refer students to the appropriate service providers, as needed.

English Language Center

www.rit.edu/student affairs/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 in the past 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/index.php

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
(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. FYE partners with other courses in learning communities and provides a career-based approach to each of the core topics introduced in the class.

Coaching is a required and unique aspect of FYE at RIT and is an action-oriented effort to support students in identifying and reaching their goals. 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 (1105-051) and First-Year Enrichment II (1105-052). 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.

1105-051 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**

1105-052 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
(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.

Higher Education Opportunity Program

www.rit.edu/studentaffairs/heop
(585) 475-2221 (voice/TTY)

The 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.

Renamed in 2007 in honor of retired State Assemblyman Arthur O. Eve, HEOP has existed on the RIT campus for more than 30 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 1,300 hearing and deaf international students from 90 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 coordinated with the Rochester International Council.

Information and Technology Services

www.rit.edu/its/
(585) 475-4357

Computing and network services at RIT are provided by Information and Technology Services (ITS).

Wireless, 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.

Computer security and safeguards
Computer and network use is guided by RIT's Code of Conduct for Computer and Network Use. This document, located at www.rit.edu/computerconduct, outlines RIT's official policy related to ethical use of computing and network resources. ITS put into place multiple safeguards to protect RIT's network environment and the integrity of individual user accounts.

Computer accounts are issued to students, faculty, and staff so that they can perform activities supporting educational goals and internal RIT functions. Students can generate a computer account automatically through an e-mail link confirming their initial tuition deposit. Forms for faculty and staff accounts are available online at www.rit.edu/its/help/forms.

Computer training and consulting services
ITS also provides consulting services, seminars, and mobile learning assistants to help with specific computer tasks. Computer-based training modules covering a wide variety of topics are also available; 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, or to log onto the system, go to www.rit.edu/eLearningZone.

Student employment information
ITS employs more than 250 students and is one of the largest student employers at RIT. Student employment opportunities are available at the ITS HelpDesk, in Desktop Support, at colleges through Distributed Support Services, and within Technical Support and Administrative Support services. More specific information about job opportunities within ITS is available at www.rit.edu/its/about/student_employment. Additional information about student employment opportunities can be found at the Student Employment Office site at www.rit.edu/seo.

Residential Networking (Resnet)
Residential Networking provides computer support to students living in residential housing at RIT. The Resnet team can assist students with connecting their computers to the RIT network, accessing campus computing resources, and troubleshooting computer software and hardware. Contact Resnet at (585) 475-2600 (voice), (585) 475-4927 (TTY) or resnet@rit.edu, or visit http://resnet.rit.edu.

Contacting the HelpDesk
The ITS HelpDesk is located in room 1113 of 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
Online: www.rit.edu/its/help

Service hours
Fall, winter, and spring quarter hours:
Monday-Thursday: 7:30 a.m. to 9 p.m.
Friday: 7:30 a.m. to 5 p.m.
Saturday-Sunday: Noon to 5 p.m.
Summer quarter, holidays, and quarter breaks:
Monday-Friday: 7:30 a.m. to 5 p.m.
Saturday-Sunday: Closed

Margaret's House

www.rit.edu/studentaffairs/margaretshouse
(585) 475-5176 (voice/TTY)

Child Care Programs

Margaret's House is a state-licensed child care 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

Kids on Campus Programs

The Kids on Campus program provides a variety of innovative academic workshops, along with sports activities. Programs are characterized by a dynamic, project-oriented approach to learning. Kids on Campus is for students entering grades 5 through 10. A full-day program is offered during July. Kids on Campus programs are offered to all Rochester-area students. Call for information and registration materials please call or visit the website.

New-Student Orientation

www.rit.edu/studentaffairs/orientation
(585) 475-7995 (voice/TTY)

RIT provides all entering students with programs designed to prepare them for a successful transition and adjustment to college life and further acquaint them and their families with the RIT community. Our programs provide the opportunity to:

- meet the faculty and dean of the student's college,
- address the academic and social issues involved in beginning college or transferring from one college to another,
- attend academic planning sessions,
- learn about student services,
- understand the family's role in promoting student achievement and success,
- learn about financing a college education, and
- participate in community and social activities.

Our fall orientation programs are offered prior to the start of classes. The first-year student program lasts 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
(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/

The National Technical Institute for the Deaf offers an array of educational and service activities for deaf and hard-of-hearing students. These activities and services include career and mental health counseling, student-life programming, and communication skills development in the form of speech-language instruction, speechreading, and listening/audiological services, as well as a state-of-the-art learning center.

NTID Learning Consortium

www.ntid.rit.edu/nlc

The NTID Learning Consortium is a partnership among 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 and curricular 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 and curricular support for students is available on a walk-in, scheduled, or assigned basis, either individually or in small groups;

- educational workshops (either tied 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 for remote deaf and hard-of-hearing learners and access strategies among deaf, hard-of-hearing, and hearing students and teachers 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

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

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 to get hearing aids or cochlear implants repaired, 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
(585) 475-6597 (voice/TTY)

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, Campus Safety, and other 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
(585) 475-6639 (TTY)

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)

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 and intercollegiate athletics as well as intramurals and recreation programs.

Support team members teach the RIT First-Year Enrichment course and Wellness Education courses, signing for themselves. They also provide programs and consultation for deaf and hard-of-hearing intercollegiate student-athletes and coaches. 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.

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

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 leisure activities, including intramural sports, dances, picnics, swimming, and captioned movies, 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 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
(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
(585) 475-2255, (585) 475-5515

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 matriculated students enrolled for more than six quarter credit hours in a term and born after January 1, 1957, must provide the RIT 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. RIT requires all students under 26 years of age who live in campus housing to be immunized against meningitis (meningococcal disease). Other immunizations required by RIT 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 it must be sent is included with the Admissions Office acceptance packet and also is available from the Student Health Center.

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/triosss
(585) 475-2832, (585) 475-2833

The goal of RIT's TRiO Student Support Services is to provide the academic and personal support that will enable students who qualify to fully realize their potential and to graduate. The federally funded program 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 into positive pursuits. 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.

The ultimate purpose of RIT TRiO Student Support Services is to help students meet their unique challenges and become a part of the larger community. It often serves as a bridge between the learning community that it creates and RIT.

To qualify for the program, students must meet one of the following criteria: financial eligibility, documented disability, or first-generation college 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
(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 95 countries find the RIT campus and Rochester, New York, crackling with life.

Residence Life

RIT recognizes the significance of the on-campus living experience and its effect on students' academic and social development. The Center for Residence Life, in keeping with the educational mission of the university, has as its overall purpose the general well-being and growth of students. To ensure this goal, the atmosphere, conditions, and services within our residence halls provide much more than just a place to sleep. The antiquated term "dorm" is no longer an accurate description. Our residence halls offer a comprehensive campus living experience.

Numerous activities, programs, and services are provided to residents by professional and paraprofessional staff members. To learn more about our staff, you can visit our website at www.rit.edu/sa/rl/. Events are planned and regularly conducted on each floor and, on a larger scale, in each quad area. Social and developmental activities are specifically 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. Many other topics also are covered, each designed to better prepare students to grow and mature as complete individuals.

The Residence Hall Association (RHA) represents all residential students and is a liaison between the student body and the administration. This association functions as the resident community government, developing changes in policies and procedures that will benefit the resident population. RHA also provides students with a variety of services, facilities, programs, and equipment. One of these options is RITchie's, a free game room managed by RHA. It is a comfortable place for students to relax and play video games, pool, air hockey, foosball, and a variety of board games. Students can play X-Box, Playstation 2 or Gamecube games, as well as any of our other games, for free. There is also an extensive rental movie library. RITchie's is open seven days a week, including late night (3 a.m.) on weekends.

Residence hall living

Serving approximately 3,000 students, our residence halls offer many living options to meet diverse individual needs, interests, backgrounds, and maturity levels. Students may choose living arrangements according to their own lifestyle; for example: same gender, coeducational, wellness, alcohol/substance free, intensified study, over 21 years of age, Honors, and mainstream (hearing and deaf/hard-of-hearing students living on the same floor). Also available are living options in Greek fraternities and sororities and special-interest houses such as Art House, Business Leaders of Tomorrow, Computer Science House, Engineering House, the House of General Science, International House, Photo House and Unity House. Membership in Greek or special-interest houses is required, and dues may be charged.

All RIT on-campus housing facilities are smoke free. Smoking will not be permitted in student rooms or indoor rooms/lounges or within 25 feet of the building. RIT offers a variety of room types to the residence-hall population. Room assignments are made by staff members in RIT's Housing Operations Office. Entering students are assigned to double rooms. A limited number of single rooms are available for upperclass students.

Upon receiving their acceptance packets, incoming students must complete and return the Residence Hall Contract. First-year students are required to live in residence halls unless they live with their families within a 30-mile radius of RIT. Occasionally, entering students initially may be assigned to temporary housing until on-campus housing becomes available. This is a temporary arrangement and, as space becomes available, students are quickly reassigned to on-campus housing.

At the end of the first year in residence halls, students participate in an annual housing selection process in order to reserve RIT housing for the following academic year. The RIT Inn, residence hall spaces, and campus apartments are available through this process. RIT's housing contract is for the full academic year (fall, winter, and spring quarters). If a student should become enrolled in a co-op program as part of educational study, he or she is charged only for the period of actual occupancy. Additionally, all residence hall students must participate in a meal plan. Charges for meal plans are included in the University Costs section of this bulletin.

Within the residence halls, all rooms and corridors are carpeted. (Some residence hall rooms have no carpeting in anticipation of meeting an ADA accommodation. Students without accommodations may be placed in these rooms.) Each room is equipped with beds, desks, chairs, and dressers according to the number of students assigned to that room. Window coverings and closet space also are provided. Each corridor has its own bathroom equipped with showers, and floors have a kitchenette with a microwave, sink, tables, chairs, and televisions. All residence hall rooms are equipped with cable television access, free local phone service, and free, direct, high-speed Ethernet connections to the campus computer systems and the Internet. In the Ellingson, Peterson, and Bell residential area, suites are available

in which three bedrooms are connected by a common bathroom. Several free laundry facilities are available in the residence halls.

Campus living for sophomores and beyond

Housing is offered at the RIT Inn and in residence halls and campus apartments for students in their sophomore year and beyond. All RIT housing is smoke free. An annual housing selection process is held midway through the academic year for students to select their housing for the following academic year. Students are offered housing based on their class status, with first-year students going first and the process ending with sixth-year students. Students are able to rank their preferences and preferred roommates, but RIT is unable to guarantee housing preferences.

RIT Housing Operations manages one of the nation's largest university-operated apartment systems, with approximately 3,000 students residing in nearly 1,000 individual townhouse and apartment units.

While undergraduate students compose the majority of apartment residents, a mixture of graduate and international students, as well as single and married students, can be found in each apartment complex. Apartment contracts run from September through May, but residents are permitted to leave for co-op employment without penalty.

Each complex is supported by staff from the Center for Residence Life, who assist students in making a successful transition to independent, responsible living. Students will find social and educational programs with a focus on connecting them to both campus and communitywide resources. Many programs are geared toward the transition to post-college life. Residence Life staff follow up on health and safety, roommate, or community concerns. They are available 24 hours a day, seven days a week. To find out more about staff resources, visit www.rit.edu/sa/rl/.

All apartments are equipped with a refrigerator and electric stove but are otherwise unfurnished, except for University Commons, which is fully furnished. Four of the five university-operated apartment complexes are less than a mile from the center of campus, and the other (the RIT Inn) is located three miles south. All apartment complexes are served by RIT's shuttle bus system. Information regarding apartments, townhouses, and suites can be found on our website at http://housing.rit.edu.

The RIT Inn is a unique housing option for approximately 300 upperclass students. The Inn blends college housing with many of the perks of a first-rate hotel. This facility offers furnished, air-conditioned double rooms with high-speed Ethernet connections and free cable. In addition, there is an indoor/outdoor pool, fitness center, sauna, free light housekeeping, free reserved parking, whirlpool, coffee shop, and dining facility that accepts students' food debit cards. Free shuttle service is provided for students residing at the Inn.

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/studentaffairs/ciar/index.php

The Center for Intercollegiate Athletics and Recreation oversees the athletics, recreation, intramurals, and wellness programs.

Athletics

The Intercollegiate Athletics program consists of one NCAA Division I team (men's ice hockey) and 23 Division III teams. Athletics are conducted in accordance with the National Collegiate Athletic Association (NCAA) Division III rules and the Atlantic Hockey Association. The athletics program serves approximately 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 various 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 bulk-head 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 in which students, faculty, and staff can get involved. 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 faculty, staff, and students. 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

Construction on Park Point, a commercial venture that will bring a variety of shopping, dining, and housing to a 90-acre parcel of land on the northeast corner of campus, began in the summer of 2007. Park Point opened in the fall of 2008 and features:

- 90,000 square feet of retail space, with more than 25 stores;
- a variety of housing, with room for up to 800 occupants;
- theme restaurants;
- Barnes & Noble @ RIT, the new campus bookstore; and
- galleries highlighting arts and crafts by students and faculty.

Student Government Clubs

http://clubs.rit.edu
(585) 475-4483 (voice/TTY)

For more information about the following clubs, please contact the Clubs Office at (585) 475-4483 (voice/TTY), or visit our website at http://clubs.rit.edu, or stop by the office in the RITreat. Look for the quarterly Club Day in the Student Alumni Union. The following list is of recognized clubs that were active during the 2006–07 academic year:

Career Related

Aero-Design Club
AIGA (Graphic Arts)
American Marketing Association
ASCE (Civil Engineers)
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
ITSO (Information Technology)
IIE (Industrial Engineers)
IDEA (Interior Design)
International Business Group
Jewelry and Metals Association
Life Science Club
Malaysian Student Association
MacRIT
MISST (Management of Information Systems)
Materials Research Society–RIT Chapter
MESA (Microelectronic Engineering)
National Press Photographers Assoc.
National Society of Black Engineers
New Media Fusion
Physician Assistant Student Association
Pi RIT
Premedical Student Association
Psychology Club
PUB
SPARSA (Security Practices)
SHPE (Hispanic Engineers)
Society of Manufacturing Engineers
Society of Plastics Engineers
Student Dietetic Assoc.
Society of African American Business Students
Student Interpreting Association
SSWO (Social Work)
TPSA (Technical Photographer)
Ultrasound Student Association
Women in Technology

Ethnic

Asian Culture Society
Asian Deaf Club
Caribbean Student Association
Caribbean Deaf Club
Chinese Student Scholar Association
DISA (Deaf International)
Ebony Club
Hispanic Deaf Club
Kazakh Group of Bolashakers
Korean Student Assoc.

LASA (Latin American)
Organization of African Students
OASIS (Indian Student Alliance)
Piazza Italiana
Taiwanese Student Association
Vietnamese Student Association

Hobby and Special Interest

Alpha Phi Omega
Amateur Radio Club
Anime Club
Ballroom Dance Club
Break Dancing Club
College Democrats
College Republicans
Comedy Troupe
Country Line Dancing Club
Creative Outlet
Dance Team
Dead Saints Society
Debate Society
Doves
Electronic Gaming Society
Empty Sky Go Club
FACES (Feminist Group)
FIRST
Formula SAE Racing Team
Graduate Photography Assoc.
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
Rally Enthusiast Club
RIsTep
RIT Gay Alliance
RIT Greenvehicle Team
RIT Players
RITveg
Robotics Club
Rotaract
RWAG (Wargamers)
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, 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

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. For more information, please contact us at (585) 475-2204 (voice/TTY) or www.sg.rit.edu.

Off-Campus and Apartment Student Association

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 complementary 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. For more information, contact the OCASA office at (585) 475-6680 (voice/TTY) or www.rit.edu/studentaffairs/ocasa/index.shtml.

College Activities Board

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 call (585) 475-2509 (voice/TTY). Visit our website at http://cab.rit.edu.

Black Awareness Coordinating Committee

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. For more information, please call 585-475-5624 (voice/TTY), or go to www.rit.edu/~baccwww.

Residence Halls Association

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 coffee-house atmosphere located in the tunnel under Gibson Hall. The RHA office is located in the tunnel under Baker Hall and can be contacted at (585) 475-6655 (voice/TTY) or www.rha.rit.edu.

Global Union

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. For more information, call (585) 475-2567 or visit www.rit.edu/sg/globalunion.

Greek Council

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 Week-end, Adopt-a-Highway, Tree of Angels, leadership conferences, social programs, national education speakers, Greek intramural league, and much more. For additional information, call the Greek Council Office at (585) 475-7123 (TTY), or visit us online at http://greek.rit.edu.

WITR Radio

WITR is an FM radio station operated by RIT students. It is 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 five 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 the RIT and 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. For more information, please contact us at www.modernmusicandmore.com.

NTID Student Congress

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. For more information, please contact us at http://nsc.rit.edu.

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.

Panara Theatre: Students and faculty produce major plays and performances featuring deaf and hearing actors, dancers, and technical staff. Call the box office at (585) 475-6254 (voice/TTY). For more information, please visit www.rit.edu/ntid/theater.

Lab Theater: Lab Theater features experimental, new, or unusual productions. New directors and student writers also use the space for developing their skills. For information, call (585) 475-6250 (voice/TTY).

NTID performing arts course offerings: For information regarding acting, mime, technical theater, lighting, play creating, script translation, or dance classes, call NTID's Performing Arts Program, (585) 475-6250 (voice/TTY).

Literary Series: A joint activity of the RIT Creative Arts Committee, the College of Liberal Arts and various other campus organizations, the Literary Series brings both well-known and developing writers to campus. Students who wish to participate should call (585) 475-2475 (voice/TTY).

Visiting Artists and Critics Series: Sponsored by the College of Imaging Arts and Sciences, the Creative Arts Program, and the Student Affairs Office, this series features many of the country's leading artists and critics who deal with the issues of technology in art today. For more information, call (585) 475-2646 (voice/TTY).

Student Music Association

http://music.rit.edu/

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 participate in the Western New York Intercollegiate Choral Festival. One credit hour is awarded for participation in the group. For more information, call (585) 475-6087, or e-mail Edward Schell at etsgsh@rit.edu.

Men's A Cappella Ensembles: Selected through auditions, these are ensembles of eight to 12 singers chosen from the RIT Singers. The current groups are Eight-Beat Measure, Brick City Singers, and Surround Sound. Rehearsals for both on- and off-campus appearances are adjusted to fit ensemble members' schedules. For more information, call (585) 475-6087.

Women's A Cappella Ensemble: Selected through auditions, the current group Encore is an ensemble of eight to 12 singers chosen from the RIT Singers. Rehearsals for both on- and off-campus appearances are adjusted to fit ensemble members' schedules. For more information, call (585) 475-6087.

Gospel Ensemble: This group of approximately 25 members has developed a repertoire of black spirituals, modern gospel songs, interdenominational anthems, and hymns. The group performs three times a year, during Brick City Festival, their annual Gospel Fest in February, and their annual anniversary concert. During the past few years they have opened for such renowned performers as Richard Smallwood, Vision, and Byron Cage. They perform twice a month for the gospel worship service in the Interfaith Center. For more information, call Campus Life, (585) 475-4483 (voice/TTY).

RIT Orchestra: The RIT Orchestra is open to all RIT students, faculty, staff, and musicians from the surrounding area. The repertoire includes masterworks from the Baroque to the 20th century. Past performances have included pops concerts and chamber music performances. One credit hour is awarded for participation in the group. For more information, call (585) 475-2014, or e-mail Michael Ruhling at mergsl@rit.edu.

RIT Jazz Ensemble: Instrumentalists with a background in jazz will want to check out the RIT Jazz Ensemble. Open to all RIT students, the Jazz Ensemble welcomes those who play the following instruments: saxophone, trumpet, trombone, bass guitar, guitar, piano, and drums. Performing a repertoire of varying styles, the ensemble presents quarterly concerts and performs for campus activities and academic functions. The ensemble rehearses at least once a week, on Tuesday evenings in the SAU music room, 7-10 p.m. One credit hour is awarded for participation in the ensemble. For more information, call (585) 475-5366, or e-mail Jonathan Kruger at jhkgsl@rit.edu.

RIT Concert Band: The Concert Band is open to all RIT students who play traditional band instruments. Performing repertoire of varying styles, the ensemble presents quarterly concerts and performs for campus activities and academic functions. The ensemble rehearses at least once a week, on Wednesday evenings in the SAU music room, 7-9 p.m. One credit hour is awarded for participation in the band. For more information, call (585) 475-5366 or e-mail Jonathan Kruger at jhkgsl@rit.edu.

RIT World Music Ensemble: The World Music Ensemble is open to all RIT students, faculty, and staff. Repertoire focuses on various non-Western music traditions. The ensemble regularly performs on its extensive collection of handmade African drums. One credit hour is awarded for participation in the ensemble. For more information, call (585) 475-4439, or e-mail Carl Atkins at cjagsh@rit.edu.

Center for Religious Life

www.rit.edu/studentaffairs/religion
(585) 475-2135

The Center for Religious Life is unique in the RIT community. Recognizing the balance of mind and spirit, the center's interfaith staff provides 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
(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) 475-6056

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, a corporate leadership career series, a public speaking series, an alternative spring break program, a civic engagement forum, participation in the American Heart Walk and Hillside's Special Santa drive, and volunteer connections with more than 200 different agencies in the Rochester area. For more information on leadership and community service opportunities, call (585) 475-7058, e-mail lead@rit.edu, or check out our website at www.rit.edu/lead.

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 333 (voice/TTY) from any campus phone or (585) 475-3333 (V/TTY) from the RIT apartment complexes to contact the Public Safety Department. The department provides the following services:

Blue light call boxes: Campus courtesy call boxes, identified by a blue light, are located across campus. These call boxes provide a direct line to Public Safety 24 hours a day. The location of the call is automatically recorded at the Public Safety Communications Center, making it possible for hard-of-hearing individuals to use the call boxes also. The call boxes may be used to request an escort, assist a motorist, report suspicious individuals or activity, or request access to a locked building or room.

Mobile escort service: Public Safety strongly encourages students to use the mobile escort service 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.

Safety and Security 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 RIT's website at http://finweb.rit.edu/campussafety/ritsafety2005.pdf.

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).

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

The policy of the Office of Parking and Transportation Services requires that all vehicles operated on campus by students, faculty, and staff must be registered within 10 days of arrival on campus. Students do not need to own the vehicle to register it. Navigating a large campus that provides parking for thousands of students, employees, and visitors daily can be challenging. With that in mind, transportation services are provided for all constituents. A shuttle service makes regularly scheduled stops at all RIT apartments, NTID, and academic areas throughout the school year.

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. For more information, call 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. The vehicle registration process can be completed online at www.rit.edu/parking.

Handicap parking permits: RIT honors ADA-approved handicap parking permits from every state. Handicap parking permits can be obtained at your local municipalities for handicap permits. Resident students can apply for a New York state permit at the Town of Henrietta. The 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 RIT 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 were 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 oneself or others and/or disturbs the learning and/or living environment in RIT-operated facilities or at any RIT-sponsored activity/event is strictly prohibited. Such behavior will result in Public Safety intervention and campus judicial action.

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 alcoholic 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
Possession of alcohol • In residence halls and Greek houses regardless of age • Under 21 years of age • Possession of bulk alcohol	First offense: Disciplinary probation Second offense: Deferred disciplinary suspension/deferred removal from housing and possible referral for a chemical dependency screening Third offense: Disciplinary suspension or removal from housing, with appropriate conditions
Behavior that suggests the excessive consumption of alcohol	First offense: Probable deferred disciplinary suspension/deferred removal from housing; possible referral to alternative educational sanction program or a chemical dependency screening Second offense: Disciplinary suspension and/or removal from housing, with appropriate conditions
Serious policy violations (including serving alcohol to minors, hazing events involving alcohol, or dangerous behavior as a result of alcohol)	First offense: Probable disciplinary suspension and/or removal from housing, with appropriate conditions
DWI on campus	First offense: Referral to local law enforcement agency and disciplinary suspension
Student organizational violations related to alcohol	First offense: Educational/community related sanctions; possible disciplinary suspension of organization and/or removal of recognition

These guidelines are examples of responses that will most likely result when there have been violations of the RIT alcohol policy. Each incident is handled individually. The prior judicial background of the student(s) involved and the impact of the incident on the student and the RIT community are considered when decisions are rendered. In some cases, even with first offenses, the impact of an incident may call for a more serious response. A sanction of deferred suspension or higher will require the dependent student to notify his or her parents or legal guardians about the decision and have the parents/legal guardians contact the Center for Student Conduct and Conflict Management Services for verification.

Registration procedures for student-sponsored events where alcohol is served/consumed on the RIT campus

The following procedures do not apply to private parties held in RIT-operated apartments.

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	First Offense: Deferred disciplinary suspension; deferred removal or removal from RIT housing; possible referral for a chemical dependency screening and alternative education program Second Offense: Disciplinary suspension or dismissal; drug treatment while on suspension from the university
Selling or trafficking of illegal drugs	Disciplinary suspension, dismissal or expulsion; referral to local law enforcement agencies

These guidelines are examples of responses that will most likely result when there have been violations of the RIT drug policy. Each incident is handled individually. The prior judicial background of the student(s) involved and the impact of the incident on the student and the RIT community are considered when decisions are rendered. In some cases, even though it may be a first offense, the impact of an incident may call for a more serious response. A sanction of deferred suspension or higher will require the dependent student to notify his/her parents or legal guardians about the decision and have the parents or legal guardians contact the Center for Student Conduct and Conflict Management Services for verification.

RIT Process for Student Misconduct

RIT has established well-defined processes for handling student misconduct cases while protecting the civil and academic rights of all members of the RIT community. Student conduct and appeals processes are administered through the Center for Student Conduct and Conflict Management Services. Sanctions imposed upon those found responsible for violating the RIT conduct code may range from a written warning to restitution to disciplinary suspension, dismissal, and expulsion from the university. Students suspended from RIT may not enroll in any course until such time as the suspension is waived by the Center for Student Conduct and Conflict Management Services.

RIT Conflict Management Services

Students involved in a dispute may utilize RIT Conflict Management Services. Mediation is a process by which students, organizations, faculty, or staff voluntarily meet with trained mediators to discuss ways in which problems or differences can be resolved.

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 apart-

ments 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.

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, Business Leaders of Tomorrow, 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 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; a music practice room; a unisex hairstyling and tanning salon; a candy counter; a Ben & Jerry's ice cream shop; two separate dining areas (the main cafeteria and the Ritz Sports Zone); meeting rooms; and lounges. Organizations that have 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 opened in Spring 2004. The $25 million facility 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 provide separation between 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 located 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 in close proximity to 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.

Sandella's, located in the Golisano Building, features gourmet wraps, salads, flatbread pizza, paninis, and other specialties.

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.

Barnes & Noble @ RIT

http://rit.bncollege.com
(585) 475-2501

RIT has partnered with Barnes & Noble College Booksellers to open a collegiate superstore that will serve the academic needs of the university while offering a wide range of products and services from the greater Rochester community.

Barnes & Noble @ RIT is located at Park Point, a new housing, retail, and dining site on the northeast corner of campus. The new store is nearly double the size of the previous facility, occupying more than 40,000 square feet of retail space on two levels. In addition to selling new and used textbooks, school supplies, a full range of art supplies, and dorm accessories, the store offers an expanded selection of general interest books and periodicals, a children's department, books on local topics, a section dedicated to faculty authors, and a full-service café serving Starbucks beverages. The new store also carries an expanded selection of clothing, gifts, and accessories bearing the RIT name and logo. For store hours and events, visit our website at rit.bncollege.com.

Undergraduate Admission

www.rit.edu/admission

Freshman Admission

Students applying for freshman admission for the fall quarter (September) may apply through an **Early Decision Plan** or **Regular Decision Plan.** The Early Decision Plan is designed for those who consider RIT their first-choice college and wish to receive an early notification regarding admission. Early Decision requires that candidates file their applications and all supporting documents by December 1 in order to receive admission notification by January 15.

Freshmen who choose not to apply for Early Decision are considered under our Regular Decision Plan. Regular Decision applicants who have provided all required application materials by February 1 will receive admission notification by March 15. Applications received after February 1 will be reviewed on a space-available basis, with notification letters mailed four to six weeks after the application is completed.

All applications for 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- to 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 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 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 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.

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, 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 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, 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[1]
Engineering Technology: Civil, Computer, Electrical, Electrical/Mechanical, Manufacturing, Mechanical, and Telecommunications Engineering Technology programs; Undeclared Option[2]	Algebra, geometry, trigonometry and two years of science (including physics or chemistry) required; technology courses desirable
Environmental Management: Environmental Management, Safety Technology	Three years of mathematics (including trigonometry) and two years of science (including physics or chemistry)
School of Hospitality and Service Management: Hospitality and Service Management, Nutrition Management, Undeclared Option[2]	College preparatory program including algebra, geometry and two years of science; chemistry required for Nutrition Management program.
Multidisciplinary Studies: Applied Arts and Science (transfer only)	Freshmen should apply to RIT Exploration Program in the College of Liberal Arts
Packaging Science: 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[1]
Accounting, Consumer Finance, Finance, International Business, Management, Management Information Systems, Marketing, New Media Marketing, Undeclared Business Option[2]	College preparatory program including algebra, geometry, and two years of science; trigonometry and courses emphasizing writing skills also desirable

B. Thomas Golisano College of Computing and Information Sciences

Academic Programs	High School Preparation Required[1]
Applied Networking and System Administration, Information Security and Forensics	Algebra, geometry, and two years of science required; physics, chemistry, computing, 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

Kate Gleason College of Engineering

Academic Programs	High School Preparation Required[1]
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[2]	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[1]
School of Art: Fine Arts Studio, Illustration, Medical Illustration, Undeclared Option[2] School of Design: Graphic Design, Industrial Design, Interior Design, New Media/Design, Undeclared Option[2] School for American Crafts: Ceramics/Ceramic Sculpture, Glass/Glass Sculpture, Metals/Jewelry Design, Woodworking/Furniture Design, Undeclared Option[2]	Studio art experience, in addition to a balanced academic program with courses in English, social studies, mathematics, and science, is required. Mechanical drawing also is desirable for Industrial or Interior Design applicants. Medical Illustration program requires two years of science (biology preferred). A portfolio of original artwork is required for all programs, with drawing skills being most important. Craft students should also show examples of work in their area of interest, if possible.
School of Film and Animation: Film and Animation, Digital Cinema	College preparatory program, including two years of mathematics and two years of science
School of Photographic Arts and Sciences: 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
School of Print Media: 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[1]
Advertising and Public Relations, Criminal Justice, Economics, International Studies, Professional and Technical Communication, Psychology, Public Policy, Urban and Community Studies, RIT Exploration Program[3]	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[1]
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[1]
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[2], Premedical Studies[3]	Algebra, geometry, trigonometry, biology, chemistry, and physics are recommended
Center for Imaging Science: Imaging Science	Algebra, geometry, trigonometry, and chemistry or physics required; precalculus desirable

1 Students attending high schools in New York state should note that algebra, geometry, and trigonometry are the equivalent of Mathematics Course I, II and III.

2 A one-year program for students wishing to explore alternatives before selecting a specific degree program within this RIT college or school.

3 A one-year program for students who are undecided on a major and wish to explore program options in one or more of RIT's colleges.

Transfer Admission Guidelines

College of Applied Science and Technology

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Engineering Technology: Civil Engineering Technology	1	Fall preferred	Civil, Construction, Environmental, Architectural, Transportation or Surveying Technology; Engineering Science	Courses in mathematics, science, and engineering technology
Computer Engineering Technology	1	Fall preferred	Computer Technology, Electrical or Electronic Technology, or Computer Science	Courses in computer science, math, science, and engineering technology
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
Environmental Management: 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
School of Hospitality and Service Management: 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, math, science, and liberal arts; science courses are required for Nutrition Management program
Multidisciplinary Studies: Applied Arts and Science	2	Any quarter	Transfer from associate degree programs considered on individual basis.	Courses in the liberal arts, sciences, and math
Packaging Science: 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[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Accounting	1	Any quarter	Accounting or AS degree in Business Administration	Courses in economics, accounting, the liberal arts, science, and mathematics
Consumer Finance, Finance, Graphic Media Marketing, International Business, Management, 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, math, science, economics, and computer science

B. Thomas Golisano College of Computing and Information Sciences

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Computer Science, Software Engineering	1	Fall preferred	Computer Science Engineering Science	Courses in computer science, calculus, the liberal arts, and calculus-based physics, chemistry, or biology
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

Kate Gleason College of Engineering

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
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[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
School of Art: Fine Arts Studio, Illustration, Medical Illustration School of Design: Graphic Design Industrial Design Interior Design New Media/Design and Imaging	4	Fall preferred	Related programs or studio art experience in desired disciplines	Courses in studio art, art history, and the liberal arts; portfolio of original artwork required
Transfer Adjustment: Graphic Design		Summer only		Summer courses can lead to third-year status
School for American Crafts: 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
School of Film and Animation: 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
School of Photographic Arts and Sciences: Biomedical Photographic Communications	3	Fall preferred	No common program available	Courses in biology, photography, and the liberal arts; portfolio required for photo credit
Imaging and Photographic Technology	1	Fall preferred	No common program available	Courses in college physics, mathematics, photography, and the liberal arts; portfolio required for photo credit
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
Transfer adjustment: Available in all photography programs		Summer only	Transfer adjustment leading to second- or third-year status in most programs	
School of Print Media: 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

College of Liberal Arts

Program at RIT	Co-op[1]	Entry Term	Appropriate Associate Degree Program for Transfer	Transfer Course Recommendations Without Associate Degree
Advertising and Public Relations	1	Any quarter	Liberal arts, business, communication, advertising, public relations	The liberal arts, business, communication, advertising, and public relations
Criminal Justice	2 or 3	Any quarter	Criminal Justice, Human Services, or Liberal Arts	Courses in criminal justice or related areas, the liberal arts, math, and science
Economics	2	Any quarter	AS degree in Business Administration or Liberal Arts	Courses in business, the liberal arts, math, science, and computer science
International Studies	2	Any quarter	Liberal arts with social sciences, science, languages	Courses in the liberal arts, social sciences, sciences, and languages
Professional and Technical Communication	1	Any quarter	Liberal arts with emphasis in communication and a technical field such as business, photography	Courses in the liberal arts, math, science, and computer science
Psychology	1 or 3	Any quarter	Liberal arts with science or social sciences	Courses in the liberal arts, sciences, and social sciences
Public Policy	1	Any quarter	Liberal Arts, Environmental Studies, Economics, Government, Science	Courses in the liberal arts, sciences, and social sciences
Urban and Community Studies				

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[1]	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 math
Bioinformatics, Biotechnology	1 2	Fall preferred	Biotechnology or Liberal Arts with biology	Courses in the liberal arts, sciences, and math
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, math, and physics
Biomedical Sciences, Diagnostic Medical Sonography (Ultrasound)	2 3	Fall preferred	Liberal Arts with science option; Allied Health; Radiologic Technology	Courses in the liberal arts, sciences, and math
Environmental Science	2	Fall preferred	Biology, Chemistry, Environmental Science, Liberal Arts with science option	Courses in the liberal arts, sciences, and math
Applied Mathematics, Computational Mathematics, Applied Statistics	2	Any quarter	Liberal Arts with math/science option, Computer Science, Engineering Science, Sciences	Courses in math, 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 math
Physics	2	Fall preferred	Liberal Arts with math/science option	Courses in the liberal arts, physics, math, and chemistry
Center for Imaging Science: Imaging Science	2	Fall preferred	Liberal Arts with math/science option.	Courses in calculus or higher mathematics, college chemistry, calculus-based physics, and the liberal arts

[1] *Cooperative Education: 1-required, 2-optional, 3-internship or practicum required, 4-no specific requirement.*

University Costs

The following information is provided to assist students and their families in understanding the full range of student financial aid and scholarship programs available to undergraduates, as well as the costs, payment procedures, and refund policies associated with student enrollment at RIT.

Costs and Payment Procedures

Charges for tuition, fees, and room and board are computed on a quarterly basis. University billing statements may be paid by cash, check, or electronic check (e-check). The university does not accept credit card payments for tuition, fees, and room and board that appear on the student billing statement. However, we have an arrangement for a third-party vendor to accept MasterCard and Discover Card when payment is made online. The vendor does charge a service fee for each credit card transaction.

Billing-related payments by check may be mailed to: Rochester Institute of Technology, Student Financial Services, P.O. Box 92878-200, Rochester, N.Y. 14692-8978. Payment also may be made in person at the Student Financial Services Office on the first floor of 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 2008–09 school year are as follows:
Fall Quarter—August 13, 2008
Winter Quarter—November 14, 2008
Spring Quarter—February 25, 2009
Summer Quarter—May 20, 2009

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 2008–09 (MATRICULATED DAY COLLEGE STUDENTS EXCEPT NTID) *

Tuition	Per Quarter	Three Quarters
Full-time Undergraduate (12–18 Credit Hrs.)		
Tier 1†	$8,953	$26,859
Tier 2‡	$9,208	$27,624
Part-time Undergraduate (Less than 12 Credit Hrs.)		
Tier 1	$597/Cr. Hr.	
Tier 2	$614/Cr. Hr.	
Student Activities Fee (Mandatory Charge)		
Full-time Undergraduate	$69	$207
Part-time Undergraduate	$34	$102
Student Health Fee (Mandatory Charge)		
Full-time Undergraduate	$68	$204
Residence Hall Room Charges §		
Double Occupancy	$1,807	$5,421
Single Occupancy	$2,078	$6,234
Board/Meal Plans **		
Ultra-Meal Plan (continuous entry to Grace Watson) + 5 meal options	$1,480	$4,440
14 Meals (Includes $86 debit/qtr.) + 5 meal options	$1,320	$3,960
12 Meals (Includes $221 debit/qtr.) + 5 meal options	$1,320	$3,960
All Debit (upperclassmen only)	$1,320	$3,960
Matriculated Evening Division students		
Undergraduate Tuition	$414/Cr. Hr.	

* See the National Technical Institute for the Deaf section of this bulletin for NTID cost information.
† Tier 1: For day undergraduate students who matriculated and enrolled at RIT prior to the 2003-04 school year.
‡ Tier 2: For day undergraduate students who matriculated and enrolled at RIT during the 2003-04 school year and after.
§ 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: $165 (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, 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 (voice/TTY) or -5489 (voice/TTY).

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 appeals 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 $170 million from all sources, including more than $85 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. It is available in high school guidance offices, college financial aid offices, and most public libraries. Students also can complete the FAFSA online at 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 may expect notification of financial aid awards beginning March 15. Current RIT students may 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 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 awards from RIT range from $500 to $13,000 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 7,000 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 the chair of their program of study 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 2007-08 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.

In addition, 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.

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.

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 2008–09 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.

Standard of Satisfactory Progress for the Purpose of Determining Eligibility for New York State Student Aid

Associate Degree—Quarter System

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Before being certified for this payment	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
a student must have accrued at least this many credits	0	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

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th
Before being certified for this payment	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th
a student must have accrued at least this many credits	0	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

	1st	2nd	3rd	4th	5th	6th
Before being certified for this payment	1st	2nd	3rd	4th	5th	6th
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

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 120 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 2008-09

MERIT SCHOLARSHIPS	ELIGIBILITY	AMOUNT†	WHERE TO APPLY
RIT Presidential Scholarships	Winners are selected based on academic records, recommendations and academic program requirements.	$6,000 to $12,500 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 $14,500 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 SAT reading plus math score 1200 or higher (ACT 26) and B+ average.	$6,000 per year (may not be combined with other RIT merit scholarships); 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 SAT reading plus math score 1170 or higher (ACT 26) and B+ average who submit outstanding art portfolios; up to 10 awarded.	$6,000 per year (may not be combined with other RIT merit scholarships); renewable	Freshman admission applications and art portfolios submitted by February 1 will be reviewed for possible selection.
RIT Achievement Scholarships—All Programs	Freshman applicants with SAT reading plus math score 1200 or higher (ACT 26), strong extracurricular achievements and B+ average; up to 100 awarded.	$4,000 to $6,000 per year, and may not be combined with other RIT merit scholarships; renewable.	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	See the undergraduate admission application for instructions. You must apply by February 1.
RIT Computing Medal Scholarships	RIT Computing Medal winner from a participating high school.	$3,000 per year; renewable.	You 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; up to 10 awarded each year.	$6,000 per year (may not be combined with other RIT merit scholarships); renewable.	Submit scholarship application online at: www.rit.edu/co-opscholarship. Apply between October 1 and February 15.
RIT/SAE Engineering Scholarships	Freshmen applicants to engineering technology or engineering programs; based on academic record.	$6,000 per year (may not be combined with other RIT merit scholarships); renewable, and up to 25 awarded each year.	Download scholarship application at: www.sae.org/students/engschlr.htm. Mail application to SAE by Dec. 1.
RIT/FIRST Robotics Scholarships	Freshman applicants with SAT reading plus math score 1200 or higher (ACT 26) and B+ average who have participated on a high school FIRST team; up to 10 awarded.	$6,000 per year (may not be combined with other RIT merit scholarships); renewable.	Download the scholarship application at: www.usfirst.org and mail the completed application to RIT. Prospective students must apply for admission by February 1.
RIT/Project Lead The Way (PLTW) Scholarships	Freshman applicants with SAT reading plus math score 1200 or higher (ACT 26) and B+ average who complete two or more PLTW courses; up to 5 awarded.	$6,000 per year (may not be combined with other RIT merit scholarships); renewable.	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, $4,500-$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 and 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 and 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).	Download scholarship application at: www.rit.edu/nrs and file the completed application in March.
ROTC Scholarships	Students enrolling in ROTC who are academically qualified.	Tuition support, fees, books, and monthly stipend.	Air Force: (585) 475-5197; Army: (585) 475-2881; Navy: (585) 275-4275
RIT/ROTC Subsidy	Army, Air Force, and Navy ROTC cadets awarded three- or four-year scholarships prior to enrollment.	Value of a double dorm room and standard meal plan; award amount may be affected by Pell Grant, veteran's benefits and other RIT or private awards. Award may be adjusted for off-campus housing.	Contact the Office of Financial Aid and Scholarships at (585) 475-2186 or www.rit.edu/financialaid.

† 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 $13,000 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 due to insufficient support from outside sources.	Minimum award is $100; maximum award varies.	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.	Minimum award is $100.	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-Urban League, Ibero/PRYD and Minority Transfer Scholarships	Awarded to African American, Hispanic or Native American students demonstrating financial need and academic achievement.	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.	$400 to $4,731 per year; prorated for part-time study.	File the Free Application for Federal Student Aid (FAFSA).
Federal Academic Competitiveness Grant (ACG)	Full-time students 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 students in certain math and science programs who 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 $4,000 per year; $20,000 limit for undergraduate study	File the Free Application for Federal Student Aid (FAFSA).
Federal Direct Loans	All students enrolled at least half-time in a degree program.	Maximum amount: 1st year: $3,500; 2nd Year: $4,500; 3rd, 4th, 5th years: $5,500.	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: $7,500; 2nd year: $8,500; 3rd, 4th, 5th years: $10,500.	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.
Custom Program for RIT Students - CitiAssist	Students matriculated in a degree program; may be used independent of or combined with Federal Direct Loans.	Varies.	File the Free Application for Federal Student Aid (FAFSA).

† *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 $7.15per hour).	Contact the RIT Student Employment Office at www.rit.edu/emcs/seo.

† *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) and Child of Correction Officer Awards (CO)	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), or who died as a result of injuries sustained in the line of duty (CO).	$450 per year, for up to five years, depending on the normal length of the program.	Same as TAP. In addition, file the CV or CO Award Supplement available on at www.hesc.com. May 1 deadline.
Military Service Recognition Scholarship (MSRS)	Children, spouses and financial dependents of members of the United States Armed Forces or state organized militia who, at any time on or after Aug. 2, 1990, while New York state residents, died or became severely and permanently disabled while engaged in hostilities or training for hostilities.	Award equal to SUNY four-year college tuition and mandatory educational fees (or student's actual tuition and fees, whichever is less) and allowances for room and board, books, supplies and transportation.	Same as TAP. In addition, file the Military Service Recognition Scholarship Supplement, available at www.hesc.com.
Memorial Scholarships for Children and Spouses of Deceased Police Officers, Firefighters, EMS Workers and World Trade Center Memorial	Child or spouse of person who died in service or was a victim of the Sept. 11 terrorist attacks.	Based on tuition and nontuition costs of attendance; in combination with certain other state and federal grants, may equal the average cost of attendance at the State University of New York.	Same as TAP. In addition, file the appropriate award supplement, available at www.hesc.com. 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 www.hesc.com.
NYS Regents Professional Opportunity-Scholarship	U.S. citizen and permanent NYS resident as defined by legislation, for certainapproved 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: Bureau of HEOP/VATEA Scholarships. NYS Education Dept., Education Bldg. Addition, Rm. 1071, Albany, NY 12234, (518) 486-1319.
Robert C. Byrd Honors ScholarshipProgram (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 atwww.va.gov.
Aid to Native Americans	Students who are at least one-quarter American Indian, Eskimo, or Aleut who demonstrate financial need	Amounts vary	Contact U.S. Department of Interior, Bureau of Indian Affairs, Federal Bldg., Room 523, 100 S. Clinton St., Syracuse, NY 13202.

† *Scholarship amounts indicated are based on RIT day tuition rates. Awards may be prorated for NTID-sponsored students or for evening tuition rates.*
Notes:
This chart covers the most commonly awarded financial aid programs available to full-time undergraduate students at RIT.
   Information is correct as of May 2008. 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

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 Award

Ruth L. Bernhardt Scholarship

Frank P. Benz, Jr. Memorial 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

Harold Brodie Scholarship

Bernard B. Brody Medical Sciences Scholarship

Steffan Brown Scholarship

Peter C. Browne Scholarship

Bryce Scholarship

Nettie Bullis Scholarship

College of Business Recent Alumni

Business Faculty Endowed Scholarship

Business Women's Alumni Network

Business Alumni Scholarship

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

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

James J. DeCaro Endowed Scholarship Fund

De Ridder Corporation Scholarship

Del Rosso Family Scholarship

Eliot Derman–GTS Scholarship

Ronald Dodge Engineering Scholarship

Ronald Dodge Memorial Endowed Scholarship Fund

Ronald Dodge Faculty/Staff Grants Endowed Scholarship

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

ECI Systems & Engineering

Eberly Family Scholarship

Robert Elder Scholarship

Eisenhart Memorial Scholarship

Ellingson Foundation Scholarship

Isabel & Benjamin Emerson Scholarship

Fred Emerson Foundation Scholarship

Raymond Englert Scholarship

Gerald Ephraim Scholarship

Louise Epstein Supply Scholarship in SAC

Eyer Foundation Scholarship

RIT Facilities Management Employeer Endowed Scholarship

Max Factor Family Foundation Endowed Scholarship Fund

John Doane Fay Scholarship

Rose & George Feigenbaum Scholarship Endowed Scholarship Fund

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

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

General Motors Scholarship

George T. Georgantis Memorial Scholarship

Sarah Margaret Gillam Scholarship

Jean Gillings Scholarship

Gitner Family Scholarship

George & Anne Gleason Memorial Scholarship

E. B. Gleason 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

Gould Pumps Inc. Award

Graflex Scholarship

Phillip L. Graham Scholarship

Gravure Foundation Scholarship

Edward Hableib Scholarship

Hakes Assoc. Scholarship

Hale Foundation Packaging Scholarship

Ezra Hale Scholarship

William B. Hale Scholarship

Mildred F. Hall Endowed Scholarship

Sil Hall Scholarship

Carter Harmon 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

Sol Heumann Scholarship

John & Catherine Hill Annual Scholarship

John and Catherine Hill Endowed Scholarship

Francis Sallie Ann Hilliard Scholarship

Laura Church Hillman Scholarship

Hoffend Scholarship Fund

Hogadone & Larwood Scholarship

Holmes Family Endowed 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

Institute of Fellows 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

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

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

MMET Faculty, Staff, Alumni

Abraham & Sadie Milstein Scholarship

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 L. Muntz Endowed Scholarship

Dr. Gengi Murai Endowed Scholarship Fund

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

PAETEC Scholars Program

Robert F. Panara Endowed Scholarship Fund

Daniel Pasto Scholarship

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

Edward A. Pike Scholarship

Eugene and Wanda Polisseni Award

Polyfibron Technologies

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

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

Warren Rhodes Memorial Scholarship

Ronald S. Ricotta Scholarship

Tom and Betty Richards Endowed Scholarship

Edward J. Ries Memorial Scholarship

RIT Alumni Network

RIT Alumni Legacy Scholarship

RIT International Student Association

RIT Womens Council Scholarship

Frank Ritter Memorial Scholarship

Robbins & Meyers Scholarship

Archibald & Mary Robinson Scholarship

Mary Hope Robinson Endowment for
the Performing Arts

Rochester Sales & Marketing Executives
Scholarship

Rock-Tenn Packaging Scholarship

Ian Rodgers Memorial Scholarship

Roosevelt Paper Scholarship

Robert Root Award

Willis Jennings Rose Scholarship

Phillip Rosenzweig Memorial Scholarship

Rebecca Rosenberg Scholarship

Madelon and Richard Rosett Scholarship

Rothman Family Endowment

Rubens Family Foundation

Bud & Joan Rusitzky

Laura Bradford Russell Scholarship

David & Fannie Rutty Memorial Scholarship

Stuart L. Saikkonen Memorial Scholarship

Janet R. Salitan Liberal Arts Scholarship

Esther G. Sanders Scholarship

Nelson & Celeste Sanford Memorial Scholarship

Elizabeth Dunlap Sargent Memorial Endowed
Scholarship Fund at NTID

Endowed Scholarship Fund

Ryoichi Sasakawa Endowed Scholarship Fund

E. Phillip Saunders Business Scholarship

Paul & Katherine Schmidt Scholarship

Robert Pitman Schmidt Scholarship

Charles W. Schmitt Scholarship

Kilian & Caroline Schmitt International
Scholarship

William J. Schmitt Memorial Scholarship

Ruth S. Schumacher Fund

Marlene E. Scott Memorial Scholarship

Scripps-Howard Endowed Scholarships

James Scudder Memorial Scholarship

Wilfrid & Isabel Searjeant Scholarship
Endowment

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 Entrepeneurship Scholarship

Albert & Carolie Simone Margarets House
Scholarship

Albert & Carolie Simone NRS Scholarship

Louis & Nellie Skalny Scholarship

Joseph & Deidre Smialowski Honors Scholarship

Susan Smigel International Student Scholarship

David Alan Smith Engineering and
Entrepeneurship 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

Jean MacCargo Stampe Scholarship

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

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

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

James Weldon and Lillie Chaney Brumfield
Scholarship

Cy Welcher Scholarship

Edwin Welter Fund

Weyerhaeuser Fellowship

Nelson Whitaker Scholarship

Whitman Family Scholarship

Ron & Joann White 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

Joseph C. & Loretta F. Wolf Endowed
Scholarship Fund

Henry Wolf Scholarship Endowment

Louis S. and Molly B. Wolk Foundation

Endowed Scholarship Fund for Deaf
Students at RIT

Rose Wollner Scholarship

Rudolph Wollner Scholarship

Women's Club of Rochester Endowed
NTID Scholarship

Women in Printing 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 Scholarship

Jeffrey W. Zielasko Memorial 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 ,

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

Rochester International Jazz Festival, home to more than 170 concerts featuring Grammy Award-winning and critically acclaimed jazz and contemporary artists

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, please visit these websites:
   City of Rochester
   www.ci.rochester.ny.us/
   Greater Rochester Visitors Association
   www.visitrochester.com/
   The Democrat and Chronicle Newspaper
   www.democratandchronicle.com
   Rochester Business Journal
   www.rbj.net
   City Guide to Rochester
   www.inforochester.com/
   Greater Rochester International Airport
   www.monroecounty.gov/airport-index.php

Trustees, Administration, and Faculty

Officers

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Office of the President

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Alfreda Brown, BS, MS, Ed.D., Chief Diversity Officer

Barry Culhane, BA, Ed.D., Executive Assistant to the President

Robert Finnerty, BA, MS, Chief Communications Officer

Lee Twyman, BA, MA, Ombudsperson

Division of Academic Affairs

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Eulas Boyd, BS, MA, ABD, Assistant Provost

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Nabil Nasr, BS, MS, M.Eng., Ph.D., Assistant Provost and Director of CIMS and Director of Golisano Institute of Sustainability

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Maryann K. Hinz, Assistant to the Provost

Deans

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Ashok Rao, MS, Ph.D., E. Philip Saunders College of Business

Joan B. Stone, BS, MS, Ed.D., College of Imaging Arts and Sciences

Robert Ulin, BA, MA, Ph.D., College of Liberal Arts

H. Fred Walker, BS, MBA, MOE, Ph.D., College of Applied Science and Technology

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: John E. Ettlie

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: P. R. Mukund

Kate Gleason Chair
Established: 1999
Donor: Gleason Foundation
Purpose: To honor Kate Gleason and increase the visibility of engineering for young women
Held by: Margaret B. Bailey

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: Nabil Z. Nasr

Intel Professor of Research and Technology
Established: 2000
Donor: Intel Corporation
Purpose: To support RIT's Microelectronic Engineering Department and to develop new methods of manufacturing computer chips
Held by: Bruce W. Smith

College of 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 Liberal Arts

Caroline Werner Gannett Professorship in the Humanities
Established: 1974
Donor: Mrs. Frank E. Gannett
Purpose: To perpetuate Mrs. Gannett's lifelong interest in education, especially in those fields of study that have a humanistic perspective
Held by: Mary Lynn Broe

Arthur J. Gosnell Professorship in Economics
Established: 1985
Donor: Family and friends of Arthur J. Gosnell
Purpose: To perpetuate the memory of Arthur J. Gosnell through recognition of the importance of good teaching in economics and by facilitating research into public policy questions
Held by: Amit Batabyal

Ezra A. Hale Professorship in Applied Ethics
Established: 1989
Donors: William B. and Patricia F. Hale and Lawyers Cooperative Publishing Company
Purpose: To establish a permanent memorial to a long-time and valued friend of RIT, Ezra A. Hale, and to provide instruction in applied ethics in keeping with his beliefs in sportsman-like conduct, fair play, and honesty
Held by: Wade L. Robison

William A. Kern Professorship in Communications
Established: 1971
Donor: Rochester Telephone Corporation
Purpose: To commemorate the 100th anniversary of the Rochester Telephone Corporation, to provide a memorial for a former president of the company, to honor a man who served as an RIT trustee from 1959 to 1964, and to provide instruction and research into contemporary communication issues
Held by: Diane S. Hope

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

College of Applied Science and Technology

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

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

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

Janice T. Farone, BS, Roberts Wesleyan College—Assistant Dean

Civil Engineering Technology, Environmental Management and Safety

Civil Engineering Technology

Abi Aghayere, BS, University of Lagos (Nigeria); MS, Massachusetts Institute of Technology; Ph.D., University of Alberta; PE—Acting Department Chair, Professor

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

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

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

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 —Professor Emeritus

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

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

Gregory Jones, BS, Auburn University; MS, Rochester Institute of Technology

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

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

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

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

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—Professor, Telecommunications Engineering Technology Program Chair

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

Scott J. Anson, BSME, MSME, Ph.D., State University of New York at Binghamton; PE—Manufacturing Engineering Technology Program Chair, Assistant 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, Puerto Rico-Mayaguez; MEMS, University of California at Berkeley—Assistant Professor

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

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

Thaddeus Hopkins, BS, MS, Rochester Institute of Technology—Assistant 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, Assistant Professor

S. Manian Ramkumar, BE, PSG, College of Technology-Bharathiar (India); ME, Rochester Institute of Technology—Professor

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

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

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

Fritz J. Yambrach, BS, Michigan State University; BS, MBA, Utah State University; Ph.D., University at Buffalo—Associate Professor

Adjunct Faculty

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

Jeanne W. Christman, BSEE, Clarkson University; MSCS, University of Texas at Dallas

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

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

Bruce Link, BS, Rochester Institute of Technology; MSEE, Binghamton University

John Link, BS, 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 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, PE, BEE, MEE, City College of the City University of New York

John Todd Schueckler, BS, Rochester Institute of Technology; MS, Rensselaer Polytechnic Institute

Lisa Talty, BS, MBA, Rochester Institute of Technology

Dennis E. Young, BS, Michigan State University

Alan R. Zoyhofski, BS, MS, Rochester Institute of Technology

Hospitality and Service Management

Stanley Bissell, BA, Ohio Wesleyan University; MA, University of Auckland; MS, State University College at Geneseo—Associate Professor

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

Gladys Winkworth, BS, State University of New York at Albany; MS, State University College at Brockport—Visiting Assistant Professor

Center for Multidisciplinary Studies

Mary Boyd, BA, Earlham College; MS, University of Iowa—Associate Director; Assistant Professor

Samuel McQuade III, BA, Western Washington University; MPA, University of Washington; Ph.D., George Mason University—Graduate Program Coordinator, Professor

Richard Morales, 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

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 of New York at Geneseo—Assistant Professor

Capt. Lucas McCloud, BA, University of Bridgeport—Assistant Professor

Master Sgt. Charles Sauerwald, BS, Liberty University—Instructor

Sgt. First Class Christopher Joseph, Training NCO—Instructor

Air Force ROTC

Lt. Col. David Easley, BA, University of Virginia; MS, Troy State University—Professor

Major Daniel Phillips, BS, University of South Alabama, MBA, Wright State 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

Stanley M. Widrick, BS, Clarkson College; MBA, State University of New York at Buffalo; Ph.D., Syracuse University—Senior Associate Dean, 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

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—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—Professor

Daniel D. Tessoni, BBA, St. John Fisher College; MS, Clarkson College of Technology; Ph.D., Syracuse University; CPA, New York—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—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

Robert Manning, BA, Duke University; MA, Northern Illinois University; Ph.D., Johns Hopkins University—Research Professor of Consumer Finance

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

Brenda Ghitulescu, BS, MS, Polytechnic University of Bucharest (Romania); Ph.D., University of Pittsburgh—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

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—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

Management Information Systems

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

Jack S. Cook, BS, MA, MBA, University of South Dakota; MS, Ph.D., Washington State University—Associate Professor

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Robert Y. Chung, BA, Eastern Washington State University; MS, Rochester Institute of Technology—Professor, Gravure Research Professor

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College of Liberal Arts

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Communication

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Criminal Justice

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Science, Technology, and Society/Public Policy

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Michael V. Osier, BS, University of Vermont; Ph.D., Yale University —Assistant Professor

Harvey Pough, BA, Amherst College; MA, Ph.D., University of California—Professor

Robert H. Rothman, BA, Ph.D., University of California at Berkeley; MA, California State, San Diego—Professor

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Lei Lani Stelle, BA, University of California at Santa Cruz; MS, University of British Columbia; Ph.D., University of California at Los Angeles—Assistant Professor

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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

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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 School of Pharmacy—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, 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

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Maurino P. Bautista, BS, Ateneo de Manila University (Philippines); MS, Ph.D., Purdue University—Professor

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K. Todd Houston, Deputy Director of NCHAM, Utah State University

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

Juanita Rodriguez Colón, Director, Department of Graduate Studies, School of Education, University of Puerto Rico

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

John C. Wyvill, Director, Division of Developmental Disabilities, Nebraska Department of Health and Human Services

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The Honorable Charles E. Schumer, Member, U.S. Senate, New York State

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1 George Eastman Building
2 Frank Ritter Ice Arena
3 George H. Clark Gymnasium
4 Student Alumni Union
5 Wallace Library
6 Liberal Arts Building
7A James E. Booth Building
7B Frank E. Gannett Building
8 Gosnell Building
9 James E. Gleason Building
10 Lewis P. Ross Building
11 Information Center

12 Max Lowenthal Building
14 Hugh L. Carey Building
15 Campus Connections
   Bookstore
16 Kilian J. & Caroline F. Schmitt
   Interfaith Center
17 Center for Microelectronic and
   Computer Engineering
18 Color Science Building
23 Hale-Andrews Student Life
   Center
23A August Center

24 Gordon Field House and
   Activity Center
25 Grace Watson Hall
55 Hettie L. Shumway Commons
60 Lyndon Baines Johnson
   Building
70 College of Applied
   Science and Technology,
   B. Thomas Golisano
   College of Computing and
   Information Sciences

74 Laboratory for Applied
   Computing
75 Center for Bioscience
   Education and Technology
76 Chester F. Carlson
   Center for Imaging Science
77 Bausch & Lomb Center
78 Louise Slaughter Building
82 Engineering Technology Building
86 Building 86
89 Crossroads Building
99 Facilities Management

RIT Student Residences

20 Riverknoll Apartments
90 Perkins Green Apartments
97 Colony Manor Apartments
27 Francis Baker Hall
29 Francis Baker Hall
28 Fraternity and Sorority Housing
30 Fraternity and Sorority Housing
32 Fraternity and Sorority Housing
31 Eugene Colby Hall A, B
33 Eugene Colby Hall C, D, E
37 Eugene Colby Hall F, G

35 Kate Gleason Hall
39 Helen Fish Hall A, B
41 Helen Fish Hall C, D, E, F
43 Nathaniel Rochester Hall
47 Sol Heumann Hall
49 Carleton Gibson Hall
50A Mark Ellingson Hall
50B Peter Peterson Hall
50C Alexander Graham Bell Hall,
   University Commons