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General Information & Undergraduate Programs 1988–89

Rochester Institute of Technology
Rochester, New York

Rochester Institute of Technology
1988-89 Institute Calendar

• FALL QUARTER

August 29	Move-in Day for New Residents
August 29, 30	Orientation for New Students
August 30	Evening/Saturday and Graduate Student Registration
August 31	Open Registration (New and Returning Students)
September 1	All Classes Begin
September 5	Labor Day: First Monday Class, No Evening Class
September 8	End of Drop/Add Period
October 21	Last Day to Withdraw with a Grade of "W"
November 9	Last Day Class
November 12	Last Saturday Class
November 11, 12, 14, 15	FINAL EXAMS
November 16	Last Evening Class
November 17-27	Fall/Winter Break

• WINTER QUARTER

November 22	Evening/Saturday and Graduate Student Registration
November 28	Open Registration
November 28	Evening Classes Begin
November 29	Day Classes Begin
December 3	Saturday Classes Begin
December 6	End of Drop/Add Period
December 19	Last Day of Classes Before Break
January 3, 1989	Classes Resume
February 3	Last Day to Withdraw with a Grade of "W"
February 20	Last Day Class
February 21	Reading Day (No Day Classes)
February 22-25	FINAL EXAMS
February 24	Last Evening Class
February 25	Last Saturday Class
February 26-March 5	Winter/Spring Break

• SPRING QUARTER

March 1	Evening/Saturday and Graduate Student Registration
March 6	Open Registration
March 6	Evening Classes Begin
March 7	Day Classes Begin
March 11	Saturday Classes Begin
March 14	End of Drop/Add Period
April 28	Last Day to Withdraw with a Grade of "W"
May 15	Last Day Class
May 16-19	FINAL EXAMS
May 19	Last Evening Class
May 20	Last Saturday Class
May 21	COMMENCEMENT
May 21-28	Spring/Summer Break

About this bulletin

The RIT Undergraduate Bulletin does not constitute a contract between the Institute 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, and other charges; plus unforeseen changes in other aspects of RIT life sometimes occur after the bulletin has been printed, but before the changes can be incorporated in a later edition of the same publication. Because of this, Rochester Institute of Technology does not assume a contractual obligation with its students for the contents of this Undergraduate Bulletin.

RIT admits and hires men and women, veterans and disabled individuals of any race, color, national, or ethnic origin, or marital status in compliance with all appropriate legislation, including the Age Discrimination Act.

General Information and Undergraduate Study 1988-89

Produced by RIT Communications

For more information concerning undergraduate study at RIT, or for a complete list of courses offered, write or phone:

Rochester Institute of Technology
Office of Admissions
One Lomb Memorial Drive
RO. Box 9887
Rochester, N.Y. 14623
(716)475-6631

Contents

RIT

Vol. 4 **No. 12** **August 30, 1988**
RIT (USPS 676-870) is published thirteen times annually by Rochester Institute of Technology, One Lomb Memorial Drive, P.O. Box 9887, Rochester, N.Y. 14623, five times in May, once in June, four times in July, and three times in August. Second-class postage paid at Rochester, N.Y. Postmaster: Send address changes to Rochester Institute of Technology, One Lomb Drive, P.O. Box 9887, Rochester, N.Y. 14623.

Overview of Rochester Institute of Technology

RIT at a Glance

FOUNDED IN 1829 and emphasizing career education, RIT is a privately endowed, coeducational university comprised of nine colleges.

RIT is chartered by the legislature of the State of New York and accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools. In addition to institutional accreditation, curricula in some of the colleges are accredited by appropriate professional accreditation bodies. Where applicable, specific mention of these is included in the college descriptions.

The campus occupies 1,300 acres in suburban Rochester, the third largest city in New York State.

The RIT student body consists of approximately 8,500 undergraduate students, 1,400 graduate students and 4,000 part-time students. Enrolled students represent all 50 states and 63 foreign countries.

RIT alumni number 55,000 worldwide.

RIT is the fourth oldest and fifth largest cooperative education institution in the United States, annually placing 3,400 students in co-op positions with approximately 1,300 employers.

More than 600 companies visit RIT annually, conducting over 9,000 on-campus interviews. In addition, approximately 5,000 positions are listed with the Cooperative Education and Placement Office each year.

Wallace Memorial Library has, in addition to 300,000 books, the largest microfilm collection and the most extensive collections of video-cassettes, slides, film strips, microfiche, motion pictures, Super 8.cartridges, and recordings of any area college library.

Computing services: Information Systems and Computing provides computing services on VAX/VMS and VAX/ULTRIX (UNIX) systems, and various microcomputers to students regardless of their majors. These services are provided at no cost to students. Central computer systems can be accessed via telephone or terminals in five different User Computing Centers. Publications and free seminars are available. Many RIT colleges also have computing facilities available to students in their programs.

Housing: Many of RIT's full-time students live in RIT-operated residence halls. On-campus fraternities, sororities and special-interest houses are available. Freshmen are guaranteed housing; upper-class students may live in on-campus apartments or townhouses.

Student activities: Major social events include Homecoming, Parents Weekend, Winter Weekend and Spring Weekend, along with dances, parties, speakers and events sponsored by the College Activities Board, Residence Halls Association, Greek Council and special interest clubs of many kinds.

Three national sororities and 10 national fraternities offer social activities and promote high scholastic and social standards among their members. Student affiliate chapters of a number of national technical associations also are located on the campus.

Athletics, intramurals, fitness: RIT offers a wide variety of activities for students at all levels of ability. Men's hockey, soccer and lacrosse continue to be ranked nationally, and many other teams receive recognition in the Northeast.

Men's Teams—baseball, basketball, cross country, ice hockey, lacrosse, soccer, swimming, tennis, track and wrestling

Women's Teams—ice hockey, basketball, tennis, track, swimming, cross country, soccer, Softball and volleyball

Over 60 percent of RIT students participate in one or more of our 19 intramural programs. Indoor and outdoor facilities include two gymnasiums, ice arena, swimming pool, fitness center, wrestling room, 12 tennis courts, all-weather track, an air-supported structure housing three multi-purpose courts and numerous athletic fields.

ROTC leadership and management classes are an adjunct to your curriculum and offer eligible undergraduates excellent scholarship opportunities. All three ROTC branches are available. (For additional information, see page 32.)

Visits to campus are encouraged and may be arranged in advance by writing or calling (716) 475-6631. Visits to the National Technical Institute for the Deaf may be arranged by calling (716) 475-6318, voice or TDD.

RIT's Mission and Goals

The Institute offers a variety of master's, bachelor's and associate degrees as well as certain certificate and diploma programs.

Some of these offerings are unique or unusual including: imaging science, microelectronic engineering, printing, packaging science and the programs in the School for American Craftsmen and the National Technical Institute for the Deaf.

Many of RIT's degree programs offer co-op, a formal program of study augmented by work off campus in the student's chosen field. Pioneered by RIT in New York State, the cooperative educational concept enhances the Institute's "learn by doing" philosophy.

An increasing number of RIT alumni enter graduate schools, while many others move directly into professional occupations.

RIT students

Reflecting the diversity of RIT's programs, students come from every state and many foreign countries. More than **40** percent are **transfer students,** who have enrolled from two-year colleges or other four-year institutions. About one third of the Institute's students are **women,** and **older** and **part-time students** comprise a significant proportion of the total enrollment.

Veterans, often a little older and usually ready to move directly toward a career goal, find at RIT a serious purpose and a place to make up lost time with minimal adjustment problems. Veterans' programs at the Institute help vets deal with the machinery of the Veterans' Administration and with the opportunities the government offers them.

The more than 1,000 deaf students enrolled in RIT's National Technical Institute for the Deaf make a distinct contribution to the educational envi ronment. Deaf and hearing students often share the same dormitories and sometimes the same room They play on the same teams, attend many of the same classes. Hearing students may participate in programs for deaf students by interpreting, tutoring or taking class notes for them. RIT is proud of its part in this national educational effort for deaf people. (For more information on NTID. see page 149.)

An ongoing intent

When the Rochester Athenaeum was founded in 1829 its intent was to prepare students for 'the making of a living and the living of a life." One hundred and fifty-nine years later, RIT's seventh president, Dr. M. Richard Rose, continues advocacy of that purpose: "This saying speaks of making a living and living a life not as two distinct processes, but as one It is an idea that is central to the type of education that we do best here at RIT"

RIT continues to emphasize teaching and research as the essential responsi bilities of the faculty. In support of this are such activities as the Institute Committee on Effective Teaching, individ ual and group projects to improve teaching productivity and collegiate support for faculty who engage in business and industrial research

Colleges and Schools

Applied Science and Technology (Computer Science, Food, Hotel and Tourism Management, Packaging Science; Engineering Technology; Instructional Technology)

Business

Continuing Education

Engineering

Fine and Applied Arts (Art and Design, School for American Craftsmen)

Graphic Arts and Photography (Imaging Science, Printing, Photographic Arts and Sciences)

Liberal Arts

Science

National Technical Institute for the Deaf

Degrees: RIT offers the associate in arts (AA), associate in science (AS), associate in applied science (AAS), bachelor of fine arts (BFA) bachelor of science (BS), bachelor of technology (B Tech), master of business administration (MBA), master of engineering (ME), master of fine arts (MFA), master of science (MS), master of science for teachers (MST)

Undergraduate Full-Time Programs	College	AOS	Degree and HEGIS'					Page
			AS	AAS	BFA	BS	B.Tech	
Accounting-Bus. Administration	Business			5002		0502		38
Biology	Science		5604			0401		137
Biotechnology	Science					0499		138
Ceramics, & Ceramic Sculpture	Fine & Applied Arts			5610	1009			92
Chemistry	Science		5619			1905		139
Communication, Tech. S Professional	Liberal Arts					0601		128
Communications!								
Audiovisual	Applied Science & Technology					0605		8
Biomedical Photographic	Graphic Arts & Photography			5299		1217		100
Computer Science	Applied Science & Technology			5101		0701		11
Computer Engineering Technology	Applied Science & Technology			5399			0925	16
Computing, Biomedical	Science		**			1217		144
Craft Major, Double	Fine & Applied Arts				1009			92
Criminal Justice	Liberal Arts					2105		122
Design								
Graphic	Fine & Applied Arts			5012	1009			90
Industrial and Interior	FineS Applied Arts			5012	1009			90
Diag. Med. Sonography (Ultrasound)	Science			5299		1299		147
Dietetics & Nutritional Care, General	Applied Science & Technology			5405		1306		29
Economics	Liberal Arts					2204		127
Engineering								
Computer Engineering	Engineering					0999		79
Electrical Engineering	Engineering					0909		80
Industrial Engineering	Engineering					0913		81
Mechanical Engineering	Engineering					0910		83
Microelectronic Engineering	Engineering					0999		85
Engineering Technology								
Civil Engineering Technology	Applied Science & Technology						0925	13
Computer Engineering Technology	Applied Science & Technology			5399		0925	0925	15
Electrical Engineering Technology	Applied Science S Technology						0925	17
Energy Engineering Technology	Applied Science & Technology						0925	21
Manufacturing Engineering Technology	Applied Science & Technology						0925	23
Mechanical Engineering Technology	Applied Science & Technology						0925	19
Film/Video	Graphic Arts S Photography			5008		1010		101
Foodservice Management	Applied Science & Technology			5404		1307		26
Glass	Fine & Applied Arts			5012	1009			92
Hotel and Resort Management	Applied Science S Technology			0508		5010		27
Illustration								
Medical Illustration	Fine& Applied Arts				1299			92
Painting-Illustration	Fine & Applied Arts			5610	1002			92
Printmaking-Illustration	Fine & Applied Arts			5610	1002			92
Imaging Science	Graphic Arts & Photography			5007		1011		108
Imaging & Photographic Technology	Graphic Arts & Photography			5007		1011		102
Information Systems	Business					0599		40
International Business-Bus. Admin.	Business					0513		47
Interpreting (for hearing-impaired)	National Technical Institute for the Deaf			5506				152
Manufacturing & Materials Management	Business					0506		41
Mathematics								
Applied Mathematics	Science		5617			1703		141
Computational Mathematics	Science					1703		142
Medical Technology	Science		**			1223		145
Metalcrafts S Jewelry	Fine & Applied Arts			5012	1009			92
Newspaper Production Management	Graphic Arts & Photography					0699		114
Nuclear Medicine Technology	Science		•*			1299		146
Ophthalmic Optical Finishing Technology	NTID	0699						151
Packaging Science	Applied Science & Technology					4999		30
Packaging Science (design option)	Fine& Applied Arts					4999		92
Painting, Printmaking	Fine & Applied Arts			5610	1002			92
Photographic Illustration, Professional	Graphic Arts & Photography			5007	1011			106
Photographic Marketing Management-Bus. Adm.	Business			5004		0509		46
Photographic Processing & Finishing Management	Graphic Arts & Photography			5007		0599		105
Physics	Science		5619			1902		144
Polymer Chemistry	Science					1907		140
Printing	Graphic Arts S Photography			5009		0699		110
Printing & Applied Computer Science	Graphic Arts & Photography					0699		116
Printing Systems and Engineering	Graphic Arts & Photography					0699		113
Professional and Technical Communication	Liberal Arts					0601		128
Retailing Management-Bus. Adm.	Business			5004		0509		44
Social Work	Liberal Arts					2104		123
Statistics, Applied	Science					1702		143
Travel Management	Applied Science & Technology			0510		5011		28
Weaving S Textile Design	Fine& Applied Arts			5012	1009			92
Woodworking & Furniture Design	FineS Applied Arts			5012	1009			92

' Higher Education General information Survey

" Students in these programs receive an AS in General Science (HEGIS #5649) upon successful completion of the first two years.

† See also: Design (Graphic); Film » Television; Imaging & Photographic Science; Medical Illustration; Packaging Science (Design Option); Photographic Illustration (Professional); Printing; and Printing 4 Applied Computer Science.

Undergraduate Programs	Degree and HEGIS* Code					
	AS	AAS	BFA	BS	B.Tech	AOS
Collage of Applied Science & Technology						
Audiovisual Communications				0605		
Civil Engineering Technology					0925	
Computer Science		5101		0701		
Computer Engineering Technology		5399		0925		
Elecrical Engineering Technology					0925	
Energy Engineering Technology					0925	
Foodservice Administration		5404		1307		
Travel Management		5011		0510		
Hotel and Resort Management		5010		**0508**		
General Dietetics & Nutritional Care		5405		1306		
Manufacturing Engineering Technology					0925	
Mechanical Engineering Technology					0925	
Packaging Science				4999		
College of Business						
Bus. Adm.-Accounting		5002		0502		
Business Administration		5001		0506		
Bus. Adm.-International Business				0513		
Information Systems				0599		
Manufacturing & Materials Management				0506		
Bus. Adm.-Photographic Marketing Management		5004		0509		
Bus. Adm.-Retailing Management			0509			
College of Continuing Education						
Applied Arts and Science		5699		4999		
College of Engineering						
Computer Engineering				0999		
Electrical Engineering				0909		
Industrial Engineering				0913		
Mechanical Engineering				0910		
Microelectronic Engineering				0999		
College of Fine & Applied Arts						
Ceramics & Ceramic Sculpture		5610	1009			
Double Craft Major			1009			
Graphic Design		5012	**1009**			
Industrial & Interior Design		5012	1009			
Medical Illustration			1299			
Painting; Printmaking		5610	1002			
Printmaking-Illustration		5610	1002			
Glass		5012	1009			
Metalcrafts & Jewelry		5012	1009			
Packaging Science (Design option)				4999		
Weaving & Textile Design		5012	1009			
Woodworking & Furniture Design		5012	1009			
College of Graphic Arts & Photography						
Biomedical Photographic Communications		5299		**1217**		
FilmS Television		5008		1010		
Imaging & Photographic Sciences		5007		1011		
Newspaper Production Management				0699		
Photographic Processing & Finishing Management		5007		0599		
Printing		5009		0699		
Printing & Applied Computer Science				0699		
Printing Systems Management				0699		
Professional Photographic Illustration		5007	1011			
Imaging and Photographic Technology		5007		1011		
College of Liberal Arts						
Criminal Justice				2105		
Economics				2204		
Professional & Technical Communication				0601		
Social Work				2104		
College of Science	5617			1703		
Applied Mathematics	5617			1703		
Applied Statistics				1702		
Biology	5604			0401		
Biomedical Computing	"			1217		
Biotechnology				0499		
Chemistry	5619			1905		
Polymer Chemistry				1907		
Computational Mathematics				1703		
Diagnostic Med. Sonography (Ultrasound)	**			1299		
Medical Technology				1223		
Nuclear Medicine Technology				1299		
Physics	5619			1902		
National Technical Institute for the Deaf						
Interpreting (for the hearing-impaired)		5506				
Optical Finishing Technology						0699

NOTE: Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for certain student aid awards. All the above programs are registered according to the indicated HEGIS code.

'Higher Educational General Information Survey

"Students in these programs receive an AS In General Science (HEGIS#5649) upon successful completion of the first two years.

Undergraduate Part-time Programs	College	Degree and HEGIS" Codes				Page
		Dipl.	AAS	BS	B.Tech	
Accounting	Continuing Education		5002			53
Accounting	Business			0502		38
Applied Arts & Science'	Continuing Education	5699	5699	4999		49
Applied Science						
Chemistry	Continuing Education		5305	1905		63
Electrical	Continuing Education		5399	0909		64
Mechanical	Continuing Education		5301	0910		66
Mechanical/Industrial	Continuing Education		5301	0913		65
Architectural Drawing	Continuing Education	5304				72
Auto. Screw Mach. Operator	Continuing Education	5312				72
Building Technology	Continuing Education	5317				70
Business Administration	Continuing Education		5001			53
Computer Information Systems	Continuing Education		5101			68
Criminal Justice	Liberal Arts			2204		122
Economics	Liberal Arts			2204		127
Electronics	Continuing Education	5310				72
Engineering Science	Continuing Education		5609"			67
Engineering Technology'						
Electrical Engineering Technology	Applied Science & Technology				0925	17
Manufacturing Engineering Technology	Applied Science & Technology				0925	23
Mechanical Engineering Technology	Applied Science & Technology				0925	19
Finance	Business		0506			39
Fine and Applied Arts	Continuing Education	5012				57
General Education	Continuing Education		5699			54
General Management	Continuing Education		5004			
Graphic Arts	Continuing Education		5012	1002		61
Health Institutions Management	Continuing Education		5299			
Industrial Technology						
Building Technology	Continuing Education		5317			70
Electrical	Continuing Education		5310			69
Electromechanical	Continuing Education		5311			69
Mechanical	Continuing Education		5315			69
Instrument Making & Experimental Work	Continuing Education	5312				72
Machine Design	Continuing Education	5303				73
Machine Shop	Continuing Education	5303				73
Machine Tool Technology	Continuing Education	5301"				73
Management	Business			0506		51
Management Development (also certificate, 5004)	Continuing Education	5004				51
Manufacturing Technology	Continuing Education		5399			70
Marketing	Continuing Education		5004			53
Marketing	Business			0506		43
Personnel Administration	Continuing Education		5004			53
Photographic Science	Continuing Education		5007	0999		59
Photography	Continuing Education	5007				60
Printing	Continuing Education	5009				61
Production Management	Continuing Education		5004			53
Production Management	Business			0506		43
Professional Photography	Continuing Education		5007			60
Real Estate/Insurance +	Continuing Education					51
Social Work	Liberal Arts			2104		123
T00I& Die Making	Continuing Education	5312				72
Tool Design	Continuing Education	5303				73
Tool Engineering	Continuing Education	5303				72
Traffic & Transportation	Continuing Education		5004			53

'Higher Education General Information Survey
"AS degree
+ Courses offered forNYS licensing
tState Education Dept. approval pending
'Students can also participate on a full time basis

College of Applied Science and Technology

Wiley R. McKinzie, Dean

Organized in 1972, the College of Applied Science and Technology incorporates the School of Engineering Technology; the School of Computer Science; the School of Food, Hotel and Tourism Management; the Department of Packaging Science, and the Department of Instructional Technology. The college has programs at the associate, baccalaureate, and master's degree levels. CAST also incorporates the Department of Military Science and the Department of Aerospace Science, ROTC (see page 33).

The School of Engineering Technology accepts freshmen and transfer students with appropriate associate degrees. With its excellent laboratories, strong tradition of cooperative education, and experienced faculty, the school offers quality programs emphasizing the application of existing technology to engineering problems in manufacturing, power, electronics, communications, construction, energy, and environmental concerns.

The School of Computer Science was established in 1971. It has become one of the largest and most highly regarded undergraduate schools of computer science in the nation. Its bachelor of science program consists of a two-year foundations component covering programming, algorithmic design, data structures, program design, computer organization, and file organization; an advanced topics component including programming language concepts, operating systems, and data communications; and a concentration component in one of the areas of systems programming, networking and distributed systems, computer information systems, digital systems design, or computer science theory. In addition, numerous elective courses in artificial intelligence, computer graphics, simulation, etc., may be taken. The program also includes a full year of co-op. The undergraduate curriculum is supported by dedicated computer facilities, which include numerous VAX 11/780, Masscomp, Sun, and Apollo computers driving seven special purpose laboratories: freshman, professional programming, computer graphics, operating systems, computer organization, computer networking, and digital systems design. All computer systems run in the UNIX environment and are connected with Ethernet. The faculty are computer science professionals and dedicated teachers with advanced degrees in computer science, as well as years of experience in the computer industry. The computer science program is open to both freshman and transfer students.

The School of Food, Hotel and Tourism Management became part of the College of Applied Science and Technology in 1982, but it has roots in the early history of RIT. With recently remodeled laboratories, the programs offer a variety of state-of-the-art equipment and systems. Cooperative education, which alternates periods of study and employment, is required of all students and provides the possibility of assignments at locations throughout the world. Those graduates who earn a BS degree with a major in dietetics are qualified to apply for American Dietetic Association internships.

The Department of Packaging Science, one of only a handful of baccalaureate degree packaging programs in the nation, draws heavily upon courses offered in other schools and colleges of the Institute. With a core of experientially based packaging courses, the broadly developed curriculum is representative of the areas of knowledge that are basic to the packaging science industry. The cooperative education program is optional in this department.

The Department of Instructional Technology offers both upper-division work in audiovisual communications and graduate programs in instructional technology. The audiovisual communications program is one of only a few such baccalaureate degree programs in the country. Students have direct experience in creating and running multi-image presentations requiring 15 or more slide projectors.

Resources

The experiential nature of all of the programs in the College of Applied Science and Technology requires excellent facilities and equipment. The Institute continually updates and adds equipment to maintain laboratories that contain state-of-the-art equipment. The engineering technology programs share facilities with the College of Engineering with additional laboratories in CAD/CAM systems, robotics, controls, and soils. A new CAD laboratory based on Intergraph hardware supports a number of courses. The extensive computer facilities mentioned previously are totally dedicated to academic support of the Undergraduate Computer Science Department and its joint programs. The packaging science laboratories have some of the most advanced and sophisticated packaging testing equipment in the country. The laboratories in the School of Food, Hotel and Tourism Management rival those in the industry and are coordinated by computer systems. The audiovisual communications laboratory is probably the only one in the world with the resources required to produce and stage 30-projector multi-language shows on three different major programming systems.

Acceptance of the associate degree

With the exception of the computer engineering technology program, the School of Engineering Technology and the Department of Instructional Technology (audiovisual communications) give holders of an appropriate associate degree from a community, junior, or technical college (or other similar two-year institutions) full credit for those curricula leading to the bachelor's degree.

Engineering technology students may receive the engineering technology B.Tech. degree in three years of additional study in the cooperative educational program.

Audiovisual communications transfers may receive the BS degree with two additional years of study.

The School of Computer Science and the Department of Packaging Science admit students into upper-division years and accept the associate degree at full value if the associate degree is obtained in a computer-related program or a packaging science program, respectively. They also operate programs which accept high school graduates.

Faculty
Members of the faculty in CAST are highly regarded teachers who have had considerable experience in their respective industrial fields and/or teaching in two-year and four-year colleges, and have completed graduate programs in the various areas of their specialties. All are committed to rigor and academic excellence. While teaching is their primary concern, they serve as active industrial consultants and researchers to maintain current knowledge in their respective fields. The faculty are committed to student growth and development.

Program planning
Each student in CAST is considered individually when his or her program is planned. The diversity of subject background from the two-year colleges necessitates an almost tailor-made pattern of courses and knowledge to assure that associate degrees retain the integrity they deserve, and guaranteeing, as far as possible, that previously studied material will not be repeated.

Admission at a Glance

General information on RIT's admission requirements, procedures and services is included in detail on pages 153-154 of this bulletin.

College of Applied Science and Technology Programs
The College of Applied Science and Technology prepares students for a world of rapidly expanding technological applications. The programs reflect RIT's goal of offering students relevant, leading-edge, career-oriented programs that lead to rewarding employment.

The college includes the Department of Instructional Technology, the School of Engineering Technology, the School of Computer Science, the Department of Packaging Science, and the School of Food, Hotel and Tourism Management.

Computer Science: The computer science program educates students for positions requiring a strong background in computing theory and practice. Graduates are prepared to enter graduate school or to pursue careers as system software specialists, software engineers, research programmers, systems programmers, applications specialists or computer systems analysts. Degree granted: BS—5 year with co-op.

Computer Engineering: A program jointly offered with the Department of Electrical Engineering. Oriented to prepare students in hardware design, interface, and process control. Degree granted: BS—5 year with co-op.

Packaging Science: The two options—technical or management—prepare students for initial employment in the technical and engineering aspects of package development and production, structural design, product development, sales, customer technical service, purchasing, or marketing of the company's products. Degree granted: BS—4 year.

Civil Engineering Technology: A program providing broad-based knowledge that leads graduates to employment opportunities in various branches of the civil industry. The program enables the student to pursue career interests through the selection of technical electives in structures, water resource management, environmental controls, construction management, and heavy construction. Degree granted: B.Tech. —5 year with co-op.

Computer Engineering Technology: A program that integrates the skills of digital electronics design with the programming skills of computer science. The courses emphasize current technology in computers and graduates are prepared for employment in designing, manufacturing and servicing computer systems. Transfer into the program with advanced standing is available for those with associate degrees in appropriate fields. Degrees granted: AAS—2 year; BS—5 year with co-op.

Electrical Engineering Technology: The first two years of the program provide basic courses in electricity, electronics, programming, physics and technical calculus. The upper division of the program provides further mastery in analog and digital electronics, transformed circuits, control systems, and applied differential equations. Elective options in electronic communications, digital computer design, microelectronics and electric power systems are available in the last two years of the program. Transfer into the program with junior standing is available for AAS degree holders from programs in electrical or electronic engineering technology. Degree granted: B.Tech.—5 year with co-op.

Mechanical Engineering Technology: Early emphasis in this program is on further mastery of mechanics, electricity, and mathematics. Later courses include electives in mechanical design and thermofluids. The practical and applied are emphasized. Degree granted: B.Tech.—5 year with co-op.

Manufacturing Engineering Technology: A program designed to provide the skills necessary for applying both today's and tomorrow's manufacturing technologies. Major emphasis is placed on computer-integrated manufacturing. Courses in the program prepare graduates for employment in such fields as manufacturing engineering, computer-aided design, robotics, and quality control. Students are admitted as freshmen as well as at the junior level. Degree granted: B.Tech.—5 year with co-op.

Energy Engineering Technology: A program to prepare specialists in the field of HVAC system design, energy management and control for industrial facilities, commercial establishments and residences. Degree granted: B.Tech.—5 year with co-op.

'Audiovisual Communications: The graduate becomes an audiovisual communications producer. The degree prepares the graduate to design and produce a variety of audiovisual programs and materials. Degree granted: BS—2 year.

Food, Hotel & Travel Management: Students choose their majors from four career programs: foodservice management, hotel and resort management, travel management, and general dietetics and nutritional care. The curriculum includes course work in the student's major as well as studies in business, liberal arts and sciences. This balanced approach gives the student a broad professional education complemented by laboratory, experiential project, and industry experience. In addition the school offers international exchange programs in Australia, South America and Switzerland. Industry professionals regularly offer their expertise in all of the program courses.

The foodservice management program prepares graduates for a wide choice of management careers in the $200 billion foodservice industry: restaurants, hotels, clubs, contract services, health care, educational and other institutions. The balanced academic program, lab practice, and practical work experience through cooper ative education provides graduates with a depth of exposure that prompts a

Freshman Admission Requirements

Transfer Admission with Junior Standing

Program!	Required High School Subjects*	Desirable Elective Subjects	Two-Year College Programs
Computer Science	Elem. Algebra Inter. Algebra Plane Geometry Trigonometry Physics or Chemistry	Additional mathematics and science	Computer science
Packaging Science	Elem. Algebra Inter. Algebra 1 year any science Additionally, for the Technical option, Plane Geometry; Trigonometry	Additional mathematics and science	Packaging science, business administration, engineering technology, science, or equivalent .
Computer Engineering Technology	Elem. Algebra Inter. Algebra Plane Geometry Trigonometry Physics or Chemistry	Additional mathematics and science	Computer technology Electronics technology Computer science
Civil Engineering Technology	Elem. Algebra Inter. Algebra Plane Geometry Trigonometry Physics or Chemistry	Additional Mathematics and Science	Civil, construction, environmental, architectural, transportation and surveying technology, engineering science or equivalent
Electrical Engineering Technology	Elem. Algebra Inter. Algebra Plane Geometry Trigonometry Physics or Chemistry	Additional Mathematics and Science	Electrical technology, electronics technology, engineering science, or equivalent
Energy Engineering Technology	Elem. Algebra Inter. Algebra Plane Geometry Trigonometry Physics or Chemistry	Additional Mathematics and Science	Air conditioning technology, energy technology, solar technology, environmental systems technology, mechanical engineering technology, or equivalent; engineering science
Mechanical Engineering Technology	Elem. Algebra Inter. Algebra Plane Geometry Trigonometry Physics or Chemistry	Additional Mathematics and Science	Mechanical technology, drafting and design technology or equivalent; engineering science
Manufacturing Engineering Technology	Elem. Algebra Inter. Algebra Plane Geometry Trigonometry Physics or Chemistry	Additional Mathematics and Science	Manufacturing technology, mechanical techology, drafting & design techology or equivalent; engineering science
Audiovisual Communications	First two years available at some two-year colleges		Audiovisual technology, film/television production, media production, communications or comparable programs
Food Management, Hotel and Resort Management, Travel Management	Elem. Algebra Inter. Algebra 1 year chemistry	Additional mathematics and science	Foodservice management, culinary arts, hospitality management, hotel-motel management, travel and tourism management
General Dietetics & Nutritional Care **a) Plan IV** **b) Coordinated Program (C.P.)**	Elem Algebra Inter. Algebra 1 year chemistry	Biology; additional mathematics	Dietetics or equivalent

fAll options include electives in social science, literature and humanities.
'Four years of English are required in all programs, except where state requirements differ.

demand for RIT graduates by food and beverage operations.

The hotel and resort program enables students to build their managerial skills by a balanced program of the basic principles of hospitality operations, business and financial management, liberal arts, cooperative education, hands-on class projects, laboratories and school activities.

The travel management program addresses the full range of topics associated with the dynamic and expanding travel and tourism industry.

Graduates of the fully accredited, General Dietetics and Nutritional Care Program can, with their base of knowledge about nutrition, practice in many settings from the acute care hospital to wellness centers. The program combines clinical, business and liberal arts courses, enabling graduates to meet today's industry demand for managerial skills. Two options are offered: traditional with co-op, and coordinated (C.P.) that meets the membership requirements of the American Dietetics Association. BS—4 year, with co-op.

'Upper-division program only

Yr.	AUDIOVISUAL COMMUNICATIONS, BS DEGREE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
3	ICIC-401 Message Design	4		
	ICIC-430 Audiovisual Presentation Design	4		
	ICIC-489 Audio tor AV Presentations	4		
	ICIC-441 Audiovisual Program Design I		4	
	ICIC-424 Visual Production Techniques		4	
	ICIC-442 Audiovisual Program Design II			4
	ICIC-510 Writing for A<J Programs			4
	GLLC-502 Group Communication & Problem Solving		4	
	S8IG-289 Contemporary Science-Biology or SCHG-289 Contemporary Science-Chemistry or SMAM-289 Contemporary Science-Mathematics or SPSS-289 Contemporary Science-Physics Choose one only this year			4
	* Liberal Arts (concentration)	4	4	4
	‡ Physical Education	0	0	0
4	ICIC-595 Senior Project I	2		
	ICIC-601 AV Seminar		2	
	ICIC-596 Seminar Project II		2	
	Two additional Contemporary Science courses (course numbers listed in year 3)		4	4
	AV Production Elective	4-		
	Management Elective			4
	* Liberal Arts	4		8
	* Liberal Arts (Senior Seminar)		2	
	Professional Elective	4		
	Free Elective	4	4 .	
	‡ Physical Education	0	0	0

"Seepage 118 for Liberal Arts requirements.
{See page 176 for policy on Physical Education.

Department of Instructional Technology

Clint Wellington, Director

Bachelor of Science in Audiovisual Communications

Not so long ago, audiovisual was thought of as an adjunct to communications. Today it is hard to think of communications without thinking of audiovisual. Audiovisual support for a speaker used to be something special. Now it is commonplace. Presentations that, a decade ago, would have used one slide projector, now use a half dozen.

Behind the scenes of every show, every presentation, every training package is a core of professional audiovisual communications specialists who translate ideas into the reality of media. While the growth of audiovisual communications brings about a need for specialists in a particular medium like television, there is also a demand for a generalist in audiovisual—someone who can work in a variety of media formats and who can work at any stage of the process, from determining the client's need to staging the final presentation.

RIT's audiovisual communications program is specifically designed to expand and improve the skills of graduates of two-year programs in media or audiovisual technology. The RIT program is an upper-division transfer program leading to a bachelor of science degree after only two years of study. It is one of a handful of programs in the nation featuring high technology in audiovisual communications.

RIT's audiovisual communications program is an important steppingstone to job opportunities with audiovisual production companies. The program is innovative in concept, pragmatic in its approach, and stresses the practical experience required for career in audiovisual communications. The program specializes in multi-image production and staging.

Objectives

The primary objective of the audiovisual communications program is to fully prepare qualified individuals for professional employment as audiovisual producers. The program emphasizes the technical skills needed to enter the job market and the creative and management skills required for career advancement. To meet these objectives, faculty and students in the program participate in professional audiovisual associations and are involved in the design, production, and staging of audiovisual presentations for a wide range of clients. An advisory committee composed of audiovisual leaders and practitioners from both the private and public sector reviews the program periodically to keep the curriculum and educational activities up to date and relevant.

Curriculum

The curriculum concentrates on three major areas: designing audiovisual presentations, producing audiovisual presentations, and designing and coordinating audiovisual programs, with multiple presentations. The current specialty within presentation design and production is multi-image —the use of multiple slide projectors for high impact communications.

The emphasis of the curriculum is on technical competence combined with creative design skills and the interpersonal skills needed to work with clients and other production team members. Course assignments stress direct, hands-on experience in technical skills. The practical skills are balanced with the theory of why and how audiovisual communications work. A project—the design and production of an audiovisual presentation for a client—is required.

Admission requirements

The two-year BS degree program accepts transfer students of two-year colleges who hold an associate degree in such areas as audiovisual technology, media technology, photography, film making, television production, graphic design, commercial art, or other related fields.

Graduates from other programs in two-year colleges will be considered but may be required to take courses to make up any deficiencies in audiovisual production skills.

Graduation requirements

The BS degree in audiovisual communications requires the completion of a minimum of 192 quarter-credit hours. Normally, entering students will have completed one-half of this amount in a two-year program. In addition to the coursework, a design and production project is also required. All students must meet the writing competence requirements to the professional courses; courses in liberal arts, sciences, and physical education are required.

Audiovisual production electives

ICIC-503 Practicum in Production
ICIC-571 Staging Multi-image Presentations
ICIC-580 Producing Multi-image Presentations I
ICIC-581 Producing Multi-image Presentations II
ICIC-583 Advanced Multi-image Project
ICIC-585 Producing Special Effects Slides (FX-1)
ICIC-586 Advanced Production Special Effects Slides (FX-2)

ICIC-587 Special Effects Slides: Production Seminar
Other electives may be taken in the College of Continuing Education, the School of Engineering Technology and the School of Photographic Arts and Sciences, with permission of the appropriate department and the student's academic advisor.

School of Computer Science

Evelyn Rozanski, Acting Director, School of Computer Science; Chairperson, Department of Undergraduate Computet: Science
Peter G. Anderson, Chairperson, Graduate Computer Science Department
Guy Johnson, Chairperson, Department of Applied Computer Studies

The School of Computer Science offers programs leading to the bachelor's and master's degrees. At the undergraduate level, the bachelor of science degree in computer science is offered to both high school and two-year college graduates, as first-year and upper-division students respectively. The curriculum is designed to meet the staffing demands of industry, government and education. In light of this, both theoretical foundations and applied aspects of computer science and computer technology are emphasized. Laboratory facilities provide the opportunity for hands-on experience, and students are encouraged to use these resources for experimentation. Graduates of the School of Computer Science are fully prepared for employment in computer industries and computer applications departments, or for further study at the graduate level.

Supplementing the computing provided by Information Systems and Computing as listed in the Student Services section of this catalog, the School of Computer Science provides extensive facilities for students and faculty. The facilities dedicated exclusively to the support of the Undergraduate Computer Science Department include:

- **First-Year Laboratory is devoted to the support of first-year students. Thirty SUN 3/50 workstations and two file servers provide an edge for training students in the discipline of programming.**
- **Professional Programming Laboratory is equipped with two VAX 11/780 computer systems running the Berkeley 4.3BSD UNIX and DEC ULTRIX operating systems and supports up to 64 users. After completing the freshman sequence in the First-Year Laboratory, the Pro-Lab is the main computing resource for the duration of the program.**
- **Computer Graphics Laboratory** provides a state of the art environment for the study of computer graphic techniques using eight SUN 3/60 color workstations and a file server.
- **Networking and Distributed Systems Laboratory** focuses on the study of data communications and networking strategies utilizing six SUN 2/120 workstations as networking tools.
- **Digital Logic Laboratory** provides a hands-on opportunity for students to appreciate and understand the computer equipment they work with throughout the program. Seven Apollo workstations and other hardware development tools are incorporated into the lab.

Yr.	COMPUTER SCIENCE PROGRAM, BS DEGREE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	ICSP-241 Programming I-Algorithmic Structures	4		
	ICSP-242 Programming II-Data Structures		4	
	ICSP-305 Assembly Language Programming			4
	SMAM-251,252,253 Calculus	4	4	4
	SPSP-311,312 University Physics I, II		4	4
	SPSP-371,372 University Physics Lab I, II		1	1
	GLLC-220 English Composition	**4**		
		4	4	4
	Physical Education Electives	0	0	0
2	ICSP 243-Programming III-Design and Implementation	4		
	ICSS-325 Data Organization and Management		4	
	ICSS-315 Digital Computer Organization			4
	Professional Computer Science Elective [1]			4
	SPSP-313 University Physics III	4		
	SPSP-373 University Physics Lab III	1		
	SMAM-265,266 Foundations of Discrete Mathematics I, II	4	4	
	SMAM-351 Probability			4
		4	4	4
			4	
	Physical Education Electives	0	0	0
3	ICIC-444 Technical Writing for Computer Scientists		2	
	ICSS-380 Introduction to Computer Science Theory		4	
	ICSS-440 Operating Systems		4	
	ICSS-420 Data Communication Systems		4	
	ICSP-450 Programming Language Concepts		4	
4	Computer Science Concentration [2]		8-12	
5	Computer Science Electives [3]		12-16	
	Non-CS Concentration [4]		16	
			26	
			8	
			4	
	Cooperative Education (4 quarters)			

[1JThe professional computer science elective in the second year must be chosen from the following courses:
ICSP-306 Systems Programming Fundarentals
ICSP-307 Business Applications Programming
ICSP-319 Scientific Applications Programming
PJThe computer science concentration consists of one of the following course sequences:
Systems Software
ICSS-520 Computer Architecture
ICSS-540 Operating Systems Laboratory
ICSS-580 Language Processors
Networking and Distributed Systems
ICSS-540 Operating Systems Laboratory
ICSS-541 Introduction to Computer Networks
ICSS-542 Distributed Systems Laboratory
Digital Systems Design
ICSS-400 Logic Design
ICSS-520 Computer Architecture
ICSS-545 Computer Architecture Laboratory
Computer Science Theory
ICSS-470 Finite State Machines
ICSS-4B0 Formal Languages
ICSS-515 Analysis of Algorithms
Computer Information Systems
ICSS-435 Systems Specification, Design and Implementation
ICSS-485 Database Concepts
ICSP-488 Programming Systems Workshop
Computer Graphics
ICSS-570 Introduction to Computer Graphics
ICSS-S71 Computer Graphics Laboratory
Artificial Intelligence
ICSS-455 Artificial Intelligence
ICSS-456 Expert Systems
[31Computer science courses may be taken as computer science electives except as noted in the Course Description Catalog.
[4]A non-CS concentration consists of a set of coherent courses giving the student significant expertise in an area other than computer science. Typical non-CS concentrations include mathematics, engineering technology, and business.
15]Any course open to computer science majors may be taken as a free elective.

The Undergraduate Computer Science Department has focused on the use of the UNIX operating system because of its applicability to software development. All of these facilities support the UNIX operating system and are connected by a high-speed Ethernet network. Through this network, students also have access to other off-campus networks, such as USENET, CSNET, MILNET, and BITNET. There are also 46 dial-in modem connections, over 20 printers, and Apple Macintosh microcomputers available for student use.

Separate facilities and laboratories are available for school administrative operations and the students in the Graduate Computer Science and Applied Computer Studies programs. Those facilities include the following computer systems: Pyramid 90X, AT&T 3B2/600, four AT&T 3B2/400, 35 AT&T 3B1, 15 Xerox 8014 workstations with servers, 12 Apple Macintosh systems and four Masscomps PCs.

Undergraduate Computer Science Department

Evelyn Rozanski, Chairperson

The Bachelor of Science program attracts students who are interested in both the mathematical theory and technical applications of computer science. Most employers look for students who not only are good computer scientists, but also understand the tools and techniques of mathematics, science and business. In summary, 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 will be attractive to students transferring to RIT with an associate degree in computer science backed up by significant course work in mathematics and science.

Computer science covers a wide spectrum of the field of computing. A computer scientist can specialize in areas such as data communications and networking, digital systems design and computer architecture, systems software, programming languages, computing theory, computer graphics, artificial intelligence and information systems. It is important to note that programming is an important tool, but is only a part of the vast field of computer science.

An undergraduate computer science student is required to take a core of computer science courses providing a solid foundation for advanced work. Building on this base, students can explore a variety of specializations in their junior and senior years, choosing one of seven concentration sequences. 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 a minor in a second discipline.

The program of study in computer science is subdivided into five major areas:

1. Computer science: required and elective courses in the areas of program development, computer organization, graphics, data communications, networking, artificial intelligence, systems analysis, and systems software.
2. Mathematics and science: courses covering calculus, physics, probability, and discrete mathematics.
3. Liberal arts: courses in language and literature, humanities, and social sciences.
4. Minor: a coherent set of courses in a discipline other than computer science. Most programs in the Institute can form the basis for a minor.
5. Free electives: courses chosen by the student based on his or her personal preferences.

All students in the School of Computer Science are required to obtain credit for one year (four quarters) of cooperative education prior to graduation. To help ensure that the goals of integrated academic and experiential education are attained, students must attend classes at RIT for at least one quarter after their final co-op block.

School of Engineering Technology

W. **David Baker,** Director

Engineering technology is a relatively new field in higher education, and RIT was a pioneer in the development of such programs. Originally conceived as associate degree level educational programs, engineering technology curricula were designed to prepare people to work with engineers and scientists as technicians. This educational role is presently being carried out primarily in two-year community colleges and technical institutes.

More recently, RIT again was a pioneer in the development of baccalaureate programs in engineering technology. The bachelor degree in engineering technology is designed to meet the growing need for engineering technologists at the baccalaureate level by business and industry.

The educational distinctions between a bachelor of technology degree and a bachelor of science degree in engineering can be seen in the relative breakdown of the typical curriculum requirements:

	Typical AS/BS Program	Typical AAS/B. Tech Program
Interdisciplinary Courses	50%	25%
General Education Courses	25%	25%
Professional Courses	25%	50%

In this context, interdisciplinary courses are considered to be math and science courses, while general education includes courses in the areas of communications, humanities, literature and social science. Professional courses refer to those courses directly related to the particular technical field pf study.

Five-year programs

The School of Engineering Technology offers five-year cooperative education programs leading to the bachelor of technology (B.Tech.) degree in:

1. Civil Engineering Technology
2. Electrical Engineering Technology
3. Mechanical Engineering Technology
4. Manufacturing Engineering Technology
5. Energy Engineering Technology

The upper division of these programs is designed specifically to accept graduates of associate degree programs in similar engineering technology fields, and provide a continuation of study in the student's area of specialization. Each program area consists of a carefully integrated program with professional studies, liberal education, mathematics, and on-the-job experience. Through the selection of technical electives, students can build and tailor their program based on previous knowledge and co-op experience to launch a career that best meets their needs and aspirations.

The school also offers a five-year cooperative education program leading to the bachelor of science (BS) degree in:

6. Computer Engineering Technology.

Students have the option of receiving

an AAS degree after two years of study. **Transfer** into the upper division of the program is available to graduates of **associate** degree programs in related **engineering** technology programs.

Accreditation

The programs of study leading to the bachelor degree in engineering technology are all accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET). The School of Engineering Technology is a member institution of the American Society for Engineering Education and the Council of Engineering Technology in New York State.

Careers

The bachelor degree graduate—an engineering technologist—is a distinct type of professional whose main concern and interest is with existing operation, maintenance, and management of products and processes. As such, the graduate qualifies for positions to fulfill a role within the broad engineering requirements of business, industry and government. Graduates are finding increasing acceptance in positions formerly filled by engineers in such fields as sales engineering, manufacturing engineering, field service engineering, process engineering and product engineering. At the present time, the New York State Board for Engineering and Land Surveying requires the bachelor degree in engineering technology graduate to achieve additional experience prior to becoming eligible for the New York State Professional Engineer examination. Requirements differ in other states.

The AAS graduate—an engineering technician—works closely with engineers and technologists and is prepared for positions requiring skills in fabricating and producing equipment as well as maintaining and operating apparatus and systems.

Cooperative education plan

An integral and significant part of each School of Engineering Technology program in engineering technology is on-the-job experience through the cooperative education plan. This involves alternate periods of academic study and related industrial employment.

The co-op plan provides opportunity for individual students to learn and become familiar with direct application of techniques, skills, and the latest developments in their field. Students are encouraged to explore and test the wide range of opportunities available. Such things as the specific type of work, the size of the company, the geographic location, and familiarization with the industrial community and environment can and do affect an individual's decision on the direction a future career might take. Only co-op can provide a suitable trial ground.

Obviously, co-op can also provide a significant income during the work periods which helps defray a major portion of one's educational expenses.

In the School of Engineering Technology each student is assisted in finding work related to specific career goals, however, as is the case in any employment situation, the major impetus must originate with the individual student. In some of the programs the junior class is divided into two sections with one half of the class on a co-op job, and the other half with their academic work. Detailed schedules are provided in the description of the individual programs on the following pages.

Admissions requirements

Freshmen Students: Admission to five-year programs is open to high school graduates who have completed elementary and intermediate algebra, plane geometry, trigonometry, and physics or chemistry. Emphasis is placed on math and science skills.

Transfer Students: Admission to the upper division of the five-year programs is open to persons holding an associate degree in appropriate engineering technology fields, or an acceptable equivalent. Students should have earned a minimum 2.3 grade point average. Please refer to individual department requirements for a more complete definition of an acceptable degree.

Program requirements

In addition to the required technical courses of each program, a minimum of 38 quarter credit hours of liberal arts and 36 quarter credit hours of mathematics/sciences is required for the bachelor degree. For transfer students, the quantity of credits to be completed at RIT is the specified minimums minus the amount of credits of liberal arts and mathematics/sciences transferred from the two-year college.

Graduation requirements

The minimum academic requirements in the School of Engineering Technology are:

AAS degree—The degree of associate in applied science is awarded upon earning a minimum grade point average of 2.0 in the departmentally approved program.

B.Tech/BS degree—The bachelor degree is granted if the student has (1) earned a minimum grade point average of 2.0 in the departmentally approved program and (2) completed the required number of cooperative education blocks for the program.

Evening programs

The School of Engineering Technology offers the following upper-division (junior-senior) programs during the evening hours for part-time students:

1. Electrical Engineering Technology
2. Manufacturing Engineering Technology
3. Mechanical Engineering Technology

The evening programs make it possible for students with full-time jobs during the day to receive a TAC/ABET-accredited degree on a part-time basis.

With the exception of the cooperative education and physical education requirements, the evening program requirements and graduation requirements are the same as the full-time day program. Additional part-time program information is provided in the description of the individual programs on the following pages. Persons wishing further information on part-time studies in the evening should contact the School of Engineering Technology part-time studies office at (716) 475-5190.

Civil Engineering Technology Department

Kevin M. Foley, Chairperson

Civil Engineering Technology, baccalaureate program

Background

The civil engineering profession requires the services of many individuals with a wide range of backgrounds and interests: technicians, technologists, and engineers.

The technologist translates the innovative concepts of the engineer into functioning systems and structures, using the language of codes, working drawings, and specifications.

Through electives, students have a choice of following any one of five elective paths. This, coupled with a broad based civil engineering core curriculum, provides for a good entry-level foundation in the industry, plus the ability to meet specific student interest. The program has provided graduates with extensive employment opportunities.

The program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET)

and is operated as a cooperative education program.

Admission requirements
Freshmen: Admission to the five year program is open to high school graduates with three years of mathematics (through trigonometry) and either chemistry or physics. Emphasis is placed on math and science skills
Transfer The admission of transfer students at the third-year level is open to all students who have already received an appropriate associate degree An appropriate associate degree should include

Iechnical Math (2 semesters of college level math with an intro duction to calculus)
Drafting
Technical Physics (2 semesters)
Soils Mechanics
Plane Surveying
Route Surveying
Statics (Mechanics)
Strength of Materials
Methods and Materials of Construction

Students lacking these courses will still be admitted and may be required to take the missing courses concurrently within the piogram or in addition to the program requirements.

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

Cooperative education plan
Work experience gained while completing alternating work and study quarters is especially valuable. A typical co-op job at an engineering consulting firm mighi include assisting engineers in design drafting, feasibility and preliminary report writing; inspecting, surveying, or investigating in the field. Other co-op students work in water and wastewater treatment plants, checking control panels, operating systems, pumps and other equipment. Students working in the construction field typically work a wide range of duties from craft supervision to assisting project superintendents, doing change orders, estimating drafting, and surveying

The scope of work accomplished varies with the interests of each student and increases in complexity with each succeeding job Construction companies, facility departments of large corporations, engineering consultants, testing agencies, and all branches of government employ our students. Some students work all their co op quarters

Manufacturing Engineering Technology cooperative education plan

Year	Fall	Winter	Spring	Summer
1 and 2	RIT	RIT	RIT	Vacation
3	RIT	RIT	Work	Work
4	RIT	Work	RIT	Work
5	Work	RIT	RIT	

Yr.	CIVIL ENGINEERING TECHNOLOGY, B. TECH DEGREE	Qtr. Credit Hours FALL	WTR.	SPG.	SMR.
1	SMAM-204 College Algebra & Trigonometry	4			
	ITEC-210 Engineering Graphics	4			
	ITEC-330 Construction Materials	- 4			
	ITEC-230 Computer Applications	4			
	SMAM-228 Analytical Geometry		4		
	SPSP-211 College Physics I		3		
	SPSP-271 College Physics Lab I		**1**		
	GLLC-220 English Composition		4		
	ITEF-260 CAD-Introduction		4		
	SMAT-420 Calculus for Technologies I			4.	
	SPSP-212 College Physics II			3	
	SPSP-272 College Physics Lab II			1	
	ITEC-220 Civil Engineering Graphics			4	
	* Liberal Arts (Core)			4	
	‡ Physical Education	0	0	0	
2	SPSP-213 College Physics III	3			
	SPSP-273 College Physics Lab III	1			
	ITEC-320 Surveying I	4			
	ITEC-428 Technical Communications	4			
	ITEM-302 Introduction to Statics	4			
	ITEC-360 Elementary Soils		4		
	ITEC-422 Elements of Building Construction		4		
	ITEM-303 Strength of Materials		4		
	ITEC- 340 Route Surveying			4	
	ITEC-380 Elementary Structures			4	
	Technical Elective			4	
	Liberal Arts (Core)		4	4	
	Physical Education	0	0	0	
1 2	Or completion of an appropriate associate degree or equivalent				
3	"SMAT-421 Calculusfor Technologists II	4			
	ITEC-099 Introduction to CET	0			
	ITEC-420 Hydraulics (or Technical Elective)	3			
	ITEC-421 Hydraulics Lab (or Technical Elective)	1			
	Technical Elective .	4			
	ICSA-205 Computer Techniques	4			
	‡ Physical Education Elective				
	*' SMAT 422 Solution of Engineering Problems		4		
	ITEC-404 Applied Mechanics of Materials		4		
	ITEC-513ComputerTechniquesinCET		2		
	SCHG-271 Basic Chemistry		3		
	SCHG-275 Basic Chemistry Lab		1		
	Liberal Arts (Core)		4		
4	ITEC-432 Water & Wastewater Transport Systems	2			
	ITEC-490 Structural Analysis	4			
	SCHG-272 Chemistry of Water & Wastewater	3			
	SCHG-276 Chemistry of Water & Wastewater Lab	1			
	Technical Elective	4			
	Liberal Arts (Core)	4			
	ITEC-438 Principles of Treatment of Water & Sewage			4	
	ITEC-495 Structural Design			4	
	ITEC-527 Soil Mechanics & Foundations			3	
	ITEC-528 Soil Mechanics & Foundations Lab			1	
	ITEC-546 Professional Principles & Practices			1	
	* Liberal Arts (Concentration)			4	
5	ITEC-530 Transportation Engineering		4		
	Technical Elective		8		
	Technical Elective		2		
	IFEE-414 Basic Electrical Principles			4	
	Technical Elective			2-4	
	Free Elective			4	
	"Liberal Arts (Concentration)		4	4	
	'Liberal Arts (Senior Seminar)			2	

'Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
"Refer to footnote. Electrical Eng. Tech chart, p. 17

with the same firm, while others choose from various work experiences. All are expected to use their education on the job and to bring back innovative, new, and unusually successful technologies to share with classmates.

Graduates

Past graduates with their B.Tech. in civil engineering technology are employed by consulting engineers, construction companies, industries, and by federal, state, and local government agencies. They are scattered from coast to coast and from New York to Texas. Their titles range from project superintendent, manager, or structural designer to plant operator, inspector, field party chief, and environmental officer. Also, several graduates have successfully completed master's degrees at other universities and have also registered as professional engineers in several states.

Technical electives

It is anticipated that a student will have at least two electives from one of the sequences shown. Other electives may be chosen from within that sequence, from another sequence, or from the other electives shown.

Water Resources

ITEC-482 Hydrology	4 cr.
ITEC-485 Hydraulic Structures	4 cr.
ITEC-480 Groundwater Hydraulics	4 cr.

Environmental Controls

ITEC-510 Design of Water Treatment Facilities	2 cr.
ITEC-514 Land Planning	4 cr.
ITEC-520 Design of Wastewater Treatment Facilities	4 cr.
ITEC-525 Hazardous Waste	4 cr.
ITEC-522 Principles of Water and Wastewater Treatment II	4 cr.
ITEC-556 Wastewater Treatment Plant Operation & Control	4 cr.

Construction Management

ITEC-500 Labor Relations	2 cr.
ITEC-509 Cost Estimating	2 cr.
ITEC-560 Construction Project Management I	4 cr.
ITEC-561 Construction Project Management II	4 cr.
ITEC-544 Contracts and Specifications	2 cr.

Structures

ITEC-470 Timber Design	4 cr.
ITEC-518 Masonry Design	2 cr.
ITEC-516 Reinforced Concrete Design	4 cr.
ITEC-552 Steel Design	4 cr.

Building and Heavy Construction

ITEC-460 Construction Equipment	4 cr.
ITEC-550 Construction Practices	2 cr.
ITEC-505 Construction Safety	2 cr.
ITEC-535 Pavement Design	4 cr.
ITEC-444 Mechanical Equipment	2 cr.

Other Electives

ITEF-436 Engineering Economics	4 cr.
SMAM-309 Elementary Statistics	4 cr.
ITEM-440 Applied Thermodynamics	4 cr.
ITEM-405 Applied Dynamics	4 cr.
ITEM-440 Applied Thermodynamics	4 cr.

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 advisor.

Students are encouraged to utilize the first-class computer facilities and to work with professors on additional applications of computer graphics. The RIT College of Continuing Education offers evening courses, and all of the day college courses are open if schedules can be arranged and the students have the capacity to handle additional credits.

Computer Engineering Technology Department

Thomas J. Dingman, Chairperson

Computer Engineering Technology, AAS and BS programs

There is an increasing need for graduates possessing both computer programming skills and a sound knowledge of computer (digital) electronic hardware. This is true for both technicians with an AAS degree and for technologists with the bachelor of science degree.

Based on a foundation in physics and applied mathematics, the computer engineering technology program is designed to develop the hardware and software skills necessary for design and development of systems involving computers. The upper division of the program also includes a required co-op work/study component, giving the student valid work experience before graduation.

Students completing the first two years of the program will be eligible to receive the AAS degree and enter the employment field as a computer technician.

Electives are available in the upper division and may be taken from computer science or electrical engineering technology courses. Other courses are available on approval by an advisor.

Admission requirements

Freshmen are admitted by normal RIT procedures with an emphasis given to mathematics and science skills.

Transfer admission is open to graduates of closely allied associate degree programs. Transfer students from these closely allied programs may normally expect to complete the requirements for the BS degree in three years which includes seven academic quarters and four quarters of cooperative employment experience. Recognizing that no single program of study can effectively integrate all AAS transfer students into the curriculum, each qualified transfer student will be evaluated on a course-by-course evaluation and will be given a specific program of study that best meets his or her career goals, provides a meaningful cooperative work experience, and permits the student to fulfill the degree requirements in a reasonable period of time.

Cooperative education plan

Students in the five-year program attend classes during the Fall, Winter, and Spring quarters of their first and second years and begin their cooperative education plan during the third year. Students transferring with an associate degree in a similar program begin their cooperative education plan during their first year of the program. The charts illustrate the cooperative education plan for the five-year program.

Technical electives

A wide variety of technical electives can be taken from existing courses in Computer Science and Electrical Engineering Technology. Examples of these are:

A. ICSP-450 Programming Language Concepts
   ICSS-580 Language Processors
B. ICSP-306 Systems Programming Fundamentals
   ICSS-540 Operating Systems Lab
C. ICSS-541 Introduction to Computer Networks
   ICSS-545 Computer Architecture II
D. ITEE-520 Electrostatic and Magnetic Fields
   ITEE-534 Analog Communications
   ITEE-535 Telecommunication Systems

E. ITEE-560 Microelectronics I
ITEE-561 Microelectronics II

Other special electives might be:
ITEE-524 Microwave Systems
ITEE-547 Digital Processing of Signals
ITEE-554 Electronic Optic Devices
ITEE-555 Transmission Line? and Antennas
ICSS-570 Introduction to Computer Graphics

Yr.	COMPUTER ENGINEERING TECHNOLOGY, B.S. DEGREE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	SMAM-204 College Algebra and Trigonometry	4			
	SMAT-420 Calculus for Technologists I		4		
	SMAT-421 Calculus for Technologists II			4	
	ICSP-241 Programming I		4		
	ICSP-242 Programming II			4	
	ITEP-201 DC Circuits	4			
	ITEP-202 AC Circuits		4		
	ITEP-203 Electronic Devices			4	
	ITEP-305 Drafting and Fabrication	4			
	* Liberal Arts (Core)	4	4	4	
	‡ Physical Education	0	0	0	
2	SPSP-211 College Physics I	3			
	SPSP-212 College Physics II		3		
	SPSP-213 College Physics III			3	
	SPSP-271,272,273 College Physics Lab	1	1	1	
	ICSP-243 Programming III	4			
	ICSP-305 Assembly Language Programming		4		
	ITEP-301 Digital Fundamentals	4			
	SMAT-422 Solution of Engineering Problems (BS) or Liberal Arts (AAS)	4			
	ITEP-302 Linear Electronics		4		
	* Liberal Arts (Core)		4	4	
	ITEP-303 Microcomputers			4	
	SMAM-205 Mathematics for Computing I			4	
	‡ Physical Education	0	0	0	
3	SMAM-206 Mathematics for Computing II	4			
	ICSS-325 Data Organization and Management	4			
	ITEP-538 Digital Systems Design I	4			
	GLLC-403 Effective Technical Communications	4			
	SMAM-207 Mathematics for Computing III			4	
	ITEP-403 Advanced Circuit Theory			5	
	ITEP-539 Digital Systems Design II			4	
	ICSS-440 Operating Systems			4	
4	ITEP-429 Advanced Electronics		4		
	ITEP-405 Control Theory		4		
	ICSS-420 Data Communications		4		
	Liberal Arts (Core) (Concentration)		4		4
	SPSP-300 Intro Semiconductor Devices Physics				4
	ICSS-520 Computer Architecture I				4
	ITEP-540 Digital Systems Design III				4
5	ITEP-471 Topics in Computer Engineering Technology		4		
	* Liberal Arts (Concentration)		4	4	
	* Liberal Arts (Senior Seminar)			2	
	Professional Electives		8	8	

'See page 118 for Liberal Arts requirements,
tsee page J 76 for policy on Physical Education.

Computer Engineering Technology cooperative education plan (five-year program)

Year	Fall	Winter	Spring	Summer
land 2	RIT	RIT	RIT	Vacation
3	RIT	Work	RIT	Work
4	Work	RIT	Work	RIT
5	Work	RIT	RIT	

Computer Engineering Technology cooperative education schedule (sample schedule for transfer student with third-year status)

Year	Fall	Winter	Spring	Summer
3	RIT	RIT	Work	RIT
4	Work	RIT	Work	RIT
5	RIT	Work	RIT	

Electrical Engineering Technology Department

John A. Stratton, Chairperson

Electrical Engineering Technology, baccalaureate program

The bachelor of technology degree in electrical engineering technology is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET).

This relatively new professional program is designed to meet the growing needs for technologists in a rapidly changing society.

The bachelor of technology program in electrical engineering technology is a five-year baccalaureate program including over a year of cooperative work experience for full-time students. The program also accepts transfer students into the upper division from appropriate electrical or electronic engineering technology associate degree programs with full junior standing. The upper division feature of the program provides a viable option for students who have completed their associate degree and desire to continue their education in technology.

A typical program for the bachelor of technology curriculum is shown in the chart. The first two years of the program provide basic courses in electricity, analog and digital electronics, physics, technical calculus and liberal arts. The third and fourth years of the program expand on basic courses with upper-level courses in applied differential equations, liberal arts, transformed circuits, control systems, analog and digital electronics, and mechanical engineering technology. The progam is completed-by the student choosing a group of options in science, free, and technical electives. Technical electives sequences are available in electric power systems, electronic communications, digital computer design and microelectronics. Several electives also are available from other technical disciplines, and the student's academic advisor will help the student determine the best elective choices for him or her.

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

Yr.	ELECTRICAL ENGINEERING TECHNOLOGY, B. TECH DEGREE,	Qtr. Credit Hours			
	Lower Division	**FALL**	**WTR.**	**SPG.**	**SMR.**
	SMAM-204 College Algebra & Trigonometry	4			
	GLLC-220 English Composition	4			
	ITEE-201 DC Circuits	4			
	ITEE-207 First Year Orientation	1			
	ITEE-305 Drafting & Fabrication	4			
	SMAT-420 Calculus for Technologists I		4		
1	ITEE-202 AC Circuits		4		
	ICSA-208 Introduction to Programming		4		
	SMAT-421 Calculusfor Technologists II			4	
	ITEE-203 Electronic Devices			4	
	ITEE-231 Logic			4	
	Liberal Arts (Core)		*4*	4	
	‡ Physical Education	0	0	0	
	SPSP-211 College Physics I	3			
	SPSP-271 College Physics Lab I	1			
	ITEE-361 Applied Electronics I	4			
	ITEF-436 Engineering Economics	4			
	Liberal Arts (Core)	4			
	SPSP-212 College Physics II		3		
2	SPSP-272 College Physics Lab II		1		
	ITEE-353 Introduction to Microprocessors		4		
	ITEE-362 Applied Electronics II		4		
	ITEE-337 Machines & Transformers		4		
	SPSP-213 College Physics III			3	
	SPSP-273 College Physics Lab III			1	
	GLLC-403 Effective Technical Communications			4	
	ITEE-363 Applied Electronics for Communication			4	
	ITEE-335 Transducers & Instrumentation			4	
	‡ Physical Education	0	0	0	
1 **2**	Or completion of an appropriate associate degree orequivalent				

		FALL or WTR.		SPG. or SMR.
	"SMAT-422 Solution of Engineering Problems	**4**		
	ITEE-401 Transformed Circuits I	**4**		
	ITEE-424 Logic & Digital Devices	4		
3	SCHG-240 Fundamentals of Chemistry			4
	ITEE-402 Transformed Circuits II			4
	ITEE-428 Linear Amplifier Design			4
	"Liberal Arts (Core)	**4**		**4**
	ITEE-404 Control Systems I	4		
	ITEE-530 Operational Amplifiers	**4**		
	ITEE-542 Microprocessors	4		
4	ITEE-532 Power Amplifier Design			**4**
	Math Elective			4
	Programming Elective			**4**
	"Liberal Arts (Concentration)	4		4
	ITEM-408 Introduction to Strength of Materials	4		
	"Liberal Arts (Senior Seminar)	2		
5	"Liberal Arts (Concentration)			4
	Technical Elective	**4**		**4**
	Technical Specialization	4		**4**
	Free Elective			**4**

"The program shown is thai which would be taken by those who start at RIT as freshmen. Each transfer student will be given a program tailored to their particular needs upon acceptance. Graduates will have to meet a minimum of 36 quarter hours of mathematics and science (including credits transferred) and include mathematics SMAT422 orequivalent.

'Seepage 118 for Liberal Arts requirements.
(See page 176 for policy on Physical Education.

Electrical Engineering Technology cooperative education plan

Year		Fall	Winter	Spring	Summer
land 2		RIT	RIT	RIT	Vacation
3 and 4	**A**	RIT	Work	RIT	Work
	B	Work	RIT	Work	RIT
5	**A**	RIT	Work	RIT	Work
	B	Work	RIT	RIT	-

Admission requirements
Freshmen are admitted by normal RIT procedures with an emphasis given to mathematics and science skills.

Transfer admission is open to graduates of two-year associate degree electrical or electronic engineering technology programs. 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 that are closely related to electrical technology and that have appropriate circuits and electronics course levels are also accepted, but may be required to complete some lower-level courses before starting the third year of the program.

Elective sequences

Computer Design
ITEE-538 Digital Computer Design I
ITEE-539 Digital Computer Design II
ITEE-543 Peripherals and Interfacing
ITEE-565 16-Bit Microprocessors

Power Systems
ITEE-550 Power Systems I
ITEE-551 Protective Relaying
ITEE-552 Power Systems II

Electronic Communications
ITEE-534 Analog Communications
ITEE-535 Telecommunications Systems
ITEE-524 Microwave Systems
ITEE-555 Transmission Lines and Antennas
ITEE-547 Digital Processing of Signals

Microelectronics
ITEE-560 Microelectronics I
ITEE-561 Microelectronics II

Other Electives:
ITEE-554 Electronic Optic Devices
ITEE-536 Control Systems II
ITEE-580 Senior Project
ITEF-424 Statistical Quality Control
ITEF-485 Robots in Manufacturing
ITEF-437 Value Analysis

Evening program
The upper-division portion of this program may be taken on a part-time basis during the evening hours by those who are employed full-time and desire to receive an ABET-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, circuit theory and power concepts are emphasized to provide the background for later courses in control systems and microprocessors.

ELECTRICAL ENGINEERING TECHNOLOGY, B. TECH. EVENING PROGRAM

Year	Quarter	Courses
1	Fall	SMAT-420 Calculus for Technologists!
		ITEE-437 Computer Programming Techniques
	Winter	ITEE-424 Logic & Digital Devices
		SMAT-421 Calculus for Technologists II
	Spring	SMAT-422 Solution of Engineering Problems
		ITEE-542 Microprocessors
2	Fall	GLLC-403 Effective Technical Communications
		ITEE-401 Transformed Circuits I
	Winter	ITEM-408 Introduction to Strength of Materials
		ITEE-402 Transformed Circuits II
	Spring	ITEE-337 Machines and Transformers
		ITEF-436 Engineering Economics
3	Fall	ITEE-428 Linear Amplifier Design
		ITEE-404 Control Systems I
	Winter	ITEE-530 Operational Amplifiers
		Liberal Arts (Core)
	Spring	ITEE-532 Power Amplifier Design
		Liberal Arts (Core)
4	Fall	Technical Elective
		SCHG-240 Fundamentals of Chemistry
	Winter	Technical Elective
		Liberal Arts (Concentration)
	Spring	Technical Elective
		Liberal Arts (Concentration)
5	Fall	Liberal Arts (Concentration)
		Senior Seminar

Technical electives that are available and appropriate for the electrical engineering technology program include:

Course
ITEE-524 Microwave System
ITEE-534 Analog Communications
ITEE-535 Telecommunication Systems
ITEE-536 Control Systems II
ITEE-538 Digital Computer Design I
ITEE-539 Digital Computer Design II
ITEE-543 Peripherals and Interfacing
ITEE-550 Power Systems I
ITEE-551 Protective Relaying
ITEE-554 Electronic Optic Devices
ITEE-555 Transmission Lines and Antennas
ITEE-560 Microelectronics I
ITEE-561 Microelectronics II
ITEE-565 16-Bit Microprocessors

Note—some electives are offered only on an alternating year basis. Please check with an advisor while planning your program technical elective content.

[1986-89 EVENINQ COURSE OFFERINGS - ELECTRICAL ENGINEERING T ECHNOLOQY					
Course Registration iNumb« _	Subject and Credit	Fell	Winter	Spring	Summer
ITEE-337 0609-3370-70	Machines and Transformers (4)			TR-6:20-8:20	
ITEE-401 0609-401-70	Transformed Circuits, I (4)	TR 6-7:50			
ITEE-402 0609-402-70	Transformed Circuits II (3)		TR 6-7:30		
ITEE-404 0609-402-70 81.82	Contol Systems I (4)	TR-7-8:20 M 6:30-8:20 8:30-10:20			
ITEE-411 0609-411-70 81.82	Electrical Principle Des. I (4)	MW 7-8:20 R-6:30-8:20 TBA			
ITEE-412 0609-412-70 81,82	Electrical Principle Des. II (4)		M-W 7-8:20 R-6:30-8:20 TBA		
ITEE-413 0609-413-70 81	Applied Micro-processors (4)			W 5:30-8:20 M-5:20-8:20	
ITEE-424 0609-424-70 81,82	Logic Dig. Dev. (4)		TR 8:30-9:50 M 6:30-8:20 M 8:30-10:20		
ITEE-428 0609-428-70 81.82	Linear Amp. Des. (4)	TR 8:30-9:50 M 6:30-8:20 8:30-10:20			
ITEE-437 0609-437-70	Comp. Prog. Tech (4)	TR 8:30-10:20		TR 6:30-8:20	
ITEE-520 0609-520-70	EM Fields (4)			TR 6:30-8:20	
ITEE-530 0609-530-70 81,82	Operational Amplifiers (4)		TR 8:30-9:50 M 6:30-8:20 8:30-10:20		
ITEE-532 0609-532-70 81,82	Power Amp. Des. (4)			TR 8:30-9:50 M 6:30-8:20 8:30-10:20	
ITEE-534 0609-534-70 81	Analog Com-munication Systems (4)	MW-7:00-8:00 M-8:30-10:20			
ITEE-535 0609-535-70	Telecommun-icate Systems (4)		TR-6:00-8:20		
ITEE-536 0609-536-70	Controls II (4)	Not offered in 1988-89			
ITEE-538 0609-538-70 81	Dig. Comp. (4)	TR 7-8:20 M 6:30-8:20			
ITEE-539 0609-539-70 81	Dig. Comp. Des. II (4)		TR 7-8:20 M 6:30-8:20		
ITEE-542 0609-542-70 81,82	Microproc-essors (4)			TR 8:30-9:50 M 5:30-8:20 TBA	T 5:30-8:20 R 5:30-8:20 TBA
ITEE-543 0609-543-70 81	Peripherals and Inter-facing (4)			TR-7:00-8:20 M-5:30-8:20	
ITEE-550 0609-550-70	Power Systems I (4)		MW 6-8:20		
ITEE-551 0609-551-70	Protective Relaying (4)			TR 6-8:20	
ITEE-554 0609-554-70	Elec. Optic Devices (4)			TR 8:30-10:20	
ITEE-565 0609-565-70 81	16 BIT Micro-processors (4)		TR-8:30-9:50 M-5:30-8:20		

Mechanical Engineering Technology Department

Ronald F. Amberger, RE. Chairperson

Mechanical Engineering Technology, baccalaureate program

The demand for technology graduates to support the wide ranging activities of the mechanical engineering industries is ever on the increase due to discoveries, inventions, and the new needs which arise from the desire to do things in a more creative and efficient manner. The central theme of all industry is to successfully design and produce a functional, reliable and profitable product or service. This task can only be accomplished by individuals who are familiar with concepts, the body of knowledge, and a set of learned skills which apply to their specific field.

The Mechanical Engineering Technology Program develops in students the ability to conceive the design problem and to derive solutions through the application of familiar concepts in innovative ways, so that they can make a vital contribution to the objective of technological enterprise in their subsequent career.

The program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET) and is operated on the cooperative education plan.

Objectives of the program

The objectives of this program are to prepare the student to occupy professional positions in mechanical design, test engineering, field service engineering, technical sales, and plant operations upon graduation. The program emphasizes the development of a design methodology, and this is reinforced through the use of project-oriented assignments which challenge the student to develop his or her design abilities.

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. Individuals may specialize by taking electives in such areas as machine design, energy, instruments and controls and manufacturing.

A substantial measure of laboratory work is required, including the preparation of quality reports. Use of the computer is emphasized in most courses.

Admission requirements
Freshmen are admitted by normal RIT procedures with an emphasis given to mathematics and science skills. Transfer students enter this program at the third-year level having received an appropriate associate degree in mechanical technology, design-drafting technology 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
- Mechanical Drafting
- Manufacturing Processes
- Statics and Elementary Strength of Materials
- Machine Design
- Computer Programming

Technical electives
Mechanical Engineering Technology
ITEM-406 Dynamics of Machinery
ITEM-442 Heat Transfer
ITEM-451 Vibration and Noise
ITEM-512 Computer Integrated Mechanical Design
ITEM-521 Logic Control Systems
ITEM-530 Instrumentation
ITEM-535 Analog Control Systems
ITEM-540 Applied Thermodynamics II
ITEM-599 Independent Study

Students also may elect courses from the manufacturing engineering technology or energy engineering technology programs.

Evening program
The upper division of this program may be taken on a part-time basis during the evening hours by those who are employed full-time and desire to receive an ABET-accredited baccalaureate degree. The lower-division portion of this program may be satisfied by completing the appropriate AAS program in the College of Continuing Education. The actual upper-division program will depend upon the courses taken for the AAS program. The typical evening student requires approximately 13 quarters to complete the upper-division course requirements. In the early quarters, the fundamentals of mathematics, mechanics and materials technology are emphasized to provide the background for later courses in thermofluids, design and technical electives.

Yr.	MECHANICAL ENGINEERING TECHNOLOGY, B. TECH DEGREE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	SMAM-204 College Algebra & Trigonometry	4			
	"GLLC-220 English Composition	4			
	ITEM-211 Introduction to Materials Technology	4			
	ITEC-210 Engineering Graphics	4			
	SMAM-228 Analytic Geometry		4		
	SPSP-211 College Physics I		3		
	SPSP-271 College Physics Lab I		1		
	ITEF-260 Introduction to CAD		4		
	ITEF-220 Manufacturing Processes I		4		
	SPSP-212 College Physics II			3	
	SPSP-272 College Physics Lab II			1	
	ITEF-265 CAD I			4	
	ITEM-212 Metrology			2	
	ITEF-229 Introduction to Technical Communications			3	
	"Liberal Arts (Core)			4	
	‡ Physical Education	0	0	0	
2	SPSP-213 College Physics III	3			
	SPSP-273 College Physics Lab III	1			
	ITEF-360 CAD II	4			
	ITEM-302 Introduction to Statics	4			
	ITEF-300 BASIC Programming	4			
	ITEM-303 Strength of Materials		4		
	ITEE-314 Basic Electricity		4		
	SMAT-420 Calculus for Technologists I			4	
	ITEM-304 Materials Testing			1	
	ITEM-320 Fluid Power Systems			4	
	Technical Elective		4	3/4	
	•Liberal Arts (Core)		4	4	
	‡ Physical Education	0	0	0	
1 2	On completion of an appropriate associate degree or equivalent				

		FALL		WTR J SMR.
3	ITEM-404 Applied Mechanics of Materials	4		
	SCHG-240 Fundamentals of Chemistry	4		
	SCHG-275 Basic Chemistry Lab	1		
	"SMAT-421 Calculus for Technologists II	4		
	GLLC-403 Technical Communications	4		
	ITEM-405 Applied Dynamics			4
	SMAT-422 Solution of Engineering Problems			4
	"Liberal Arts (Core)			4
	ITEM-414 Materials Technology I			3
	ITEM-432 Computers in MET			3
		FALL/ WTR.		**SPR7 SMR.**
4	ITEM-440 Applied Thermodynamics	4		
	ITEM-415MaterialsTechnologyII	3		
	ITEM-411 Electrical Principles for Design I	4		
	ITEM-407 MET Laboratory I	2		
	"Liberal Arts (Core)	4		
	ITEM-460 Applied Fluid Mechanics			4
	ITEM-506 Machine Design			4
	ITEM-409 MET Laboratory II			2
	ITEE-412 Electrical Principles for Design II			4
	Senior Seminar			4
		FALL/ WTR.		**SPR.**
5	ITEM-465 Thermofluids Laboratory	3		
	ITEM-508 Machine Design II	4		
	Technical Elective	4		8
	"Liberal Arts (Concentration)	4		4

"Transfer students will take SMAT-420 or 421 depending on an evaluation of their mathematics background. Graduates will have to meet a minimum of 36 quarter credits of mathematics and science (including credits transferred), and include mathematics SMAT-422 or equivalent. Rearrangement of the above schedule will be allowed to meet the math/science requirements.
'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

A typical sequence of courses for a **part**-time student might be as shown at right.

Technical electives that are available and appropriate for the Mechanical Engineering Technology program are the same as those listed with the full-time program.

Students also may elect certain courses from the manufacturing engineering technology and electrical engineering technology programs.

Note—some electives are offered only on an alternating year basis. Please check with an advisor when planning your program technical elective content.

Manufacturing Engineering Technology cooperative education plan

Year		Fall	Winter	Spring	Summer
1 and 2		RIT	RIT	RIT	Vacation
3	A	RIT	RIT	Work	Work
	B	RIT	Work	Work	RIT
4	A	RIT	Work	Work	RIT
	B	Work	RIT	RIT	Work
5	A	RIT	Work	RIT	-
	B	Work	RIT	RIT	-

MECHANICAL ENGINEERING TECHNOLOGY, B. TECH. EVENING PROGRAM

Year	Quarter	Courses
1	Fall	GLCC-403 Effective Technical Communications
		SMAT-421 Calculus for Technologists II
	Winter	ITEM-404 Applied Mechanics of Materials
		Liberal Arts Core
	Spring	ITEM-432 Computers in MET
		SMAT-422 Solutions of Engineering Problems
2	Fall	SCHG-240 Fundamentals of Chemistry
		SCHG-275 Basic Chemistry Lab
		ITEM-405 Applied Dynamics
	Winter	ITEM-414 Materials Technology I
		ITEM-407 Mechanical Engineering Technology Lab I
	Spring	1TEM-415 Materials Technology II
		ITEM-409 Mechanical Engineering Technology Lab II
3	Fall	ITEE-411 Electrical Principles for Design I
		ITEM-440 Applied Thermodynamics
	Winter	ITEM-460 Applied Fluid Mechanics
		ITEE-412 Electrical Principles for Design II
	Spring	ITEM-465Thermofluid Laboratory
		Liberal Arts (Core)
4	Fall	ITEM-506 Machine Design I
		Liberal Arts (Concentration)
	Winter	ITEM-508 Machine Design II
		Liberal Arts (Concentration)
	Spring	Technical Elective
		Senior Seminar
5	Fall	Technical Elective
		Liberal Arts (Concentration)
	Winter	Technical Elective

Energy Engineering Technology baccalaureate program

Energy has been a topic of discussion in the news for the past decade or more as a result of the energy crisis. In recent years, there have been rapid developments in the energy field. These developments encompass exciting new technologies such as computer-controlled building systems, energy efficient designs for factories, commercial buildings and homes. Traditional energy work involving the design of heating and air conditioning systems, cogeneration plants and conventional power plants continues to be a very important part of the economy. This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET) and is operated on the cooperative education plan.

Objectives of the program

The program is designed to prepare individuals to work in industrial facilities design, energy management and control, energy conservation, and the design of building heating, air conditioning and energy systems. These positions are with industrial corporations, utility companies, engineering consulting firms and mechanical contractors, and governmental agencies. The upper division of this program was developed to provide a direct route for persons having an associate degree in an energy area (air conditioning technology, solar technology, etc.) to gain professional positions in the energy field. Persons having other credentials and a strong desire to enter this field also are encouraged to apply.

The curriculum

The curriculum in energy engineering technology has been designed with the assistance of professionals in the field. It includes courses which these professionals feel are fundamental for success in the field. There is a very strong emphasis on energy topics: thermodynamics, heat transfer, fluid mechanics and electrical energy. Integrated with the energy courses are supporting courses in mathematics, electrical principles, and engineering economics. In addition to the required courses, students are encouraged to select technical electives to enhance their particular area of interest. There is a strong emphasis on computer-aided design techniques.

Admission requirements

Freshmen are admitted by normal RIT procedures with an emphasis given to mathematics and science skills. The upper division of this program admits students holding an associate degree in air conditioning technology, energy technology, solar technology, environmental system technology or the equivalent. Interested persons not holding an associate degree in one of these areas are advised to contact the department to discuss admission.

Technical electives

Energy Engineering Technology

ITEC-544 Contracts and Specifications
ITEC-550 Construction Practices
ITEM-404 Applied Mechanics of Materials
ITEM-405 Applied Dynamics
ITEM-541 Alternative Energy Applications I
ITEM-543 Energy Management I
ITEM-544 Energy Management II
ITEM-545 Solar Thermal Applications
ITEM-530 Instrumentation
ITEM-575 Computer-Aided HVAC Design
ITEM-580 Power Plant Design

1988-89 EVENING COURSE OFFERINGS - MECHANICAL ENGINEERING TECHNOLOGY

Course Registration Number	Subject and Credit	Fall	Winter	Spring
1TEM-404 0610-404-70	Applied Mechanics of Mafls (4)		MW 6-8:20	
TEM 405 0610-405-70	applied Dynamics	TR 6-6:20		
ITEM-406 0610-406-70	Dynamics of Machinery (4)		MW 6-6:20	
11EM-407 0610-407-70 81.82	Mechanical Eng. Tech. Lab (2)		T 7:30-10:20 R 7:30-10:20	
ITEM-408 0610-408-70	Int. to Strength of Mafls. (4)		TR 8:30-10:20	
ITEM-409 0610-409-70 81,82	Mech Eng. Tech Lab II (2)			T 7:30-1020 R 7:30-10:20
ITEM-414 0610-414-70	Materials Technology I (3)		TR 6-7:20	
ITEM-415 0610-415-70	Materials Technology II (2)			TR 6-7:20
ITEM-432 0610-432-70	Computers in Mech. Eng. Tech. (4)			TR 8:30-10:20
ITEM-440 0610-440-70	Applied Thermody-namics (4)	MW 8:30-10:20		
ITEM-442 0610-442-70	Heat Transfer W		TR 8:30-10:20	
ITEM-451 0610-451-70	Vibration and Noise (4)			TR 8:30-10:20
ITEM-460 0610-460-70	Applied Fluid Mechanics (4)		MW 8:30-10:20	
ITEM-465 0601-465-70 81,82	Thermofluid Laboratory (3)			M 6-9:50 R 6-9:50
ITEM-506 0610-506-70	Machine Design I (4)	MW 6-8:20		
ITEM-508 0610-508-70	Machine Design il (4)		MW 6-8:20	
ITEM-521 0610-521-70	Logic Control Systems (4)			MW 6-8:20
ITEM-530 0610-530-70	Instrumen-tation (4)		630-10:20	

Courses	Registration Number and Credit	Fall	Winter	Spring	Summer
SCHG-240 1011-240-70	Fund, of Chem. (3)	TR 8:30-10:20			
SCHG-275 1011-275-8T	Chemistry Lab (1)	M 6:30-9:20			
SMAM-309 1016-309-70	Elem Stats (4)	NOT OFFERED 1988-1989			
SMAT-420 1019-420-70	Calc. Tech I (4)	TR 6:30-8:20	TR 6:30-8:20		
SMAT-421 1019-421 70	Calc. Tech. II (4)	TR 6:30-8:20	TR 6:30-8:20	TR 6:30-8:20	
SMAT-422 1019-422-70	Sol. Eng. Prob (4)		TR 6:30-8:20	TR 6:30-8:20	TR 6:30-8:20

UM Ms counts are generally ottered a one-night courses on Monday. Tuesday. Wednesday, or Thursday from 6 30-930 p m or rvro-rvght^noek dunng both early and late sections on Monday end Wednesdey. or Tuesday and Thursday Please consult your advisor before registenng*

Energy Engineering Technology cooperative education plan

Year	Fall	Winter	Spring	Summer
land 2	RIT	RIT	RIT	Vacation
3	RIT	RIT	Work	Work
4	RIT	Work	RIT	Work
5	Work	RIT	RIT	-

Yr.	ENERGY ENGINEERING TECHNOLOGY. B. TECH DEGREE	Ctr.Credit Hours FALL	WTR.	SPG.	SMR.
1	SMAM-204 College Algebra & Trigonometry	4			
	"GLLC-220 English Composition	4			
	ITEM-211 Introduction to Materials Technology	4			
	ITEC-210 Engineering Graphics	4			
	SMAM-228 Analytic Geometry		4		
	SPSP-211 College Physics I		3		
	SPSP-271 College Physics Lab I		1		
	ITEF-260 Introduction to CAD		4		
	ITEF-220 Manufacturing Processes I		4		
	SPSP-212 College Physics II			3	
	SPSP-272 College Physics Lab II			1	
	ITEF-265 CAD I			4	
	ITEM-212 Metrology			2	
	ITEF-229 Introduction to Technical Communications			3	
	"Liberal Arts (Core)			4	
	‡ Physical Education	**0**	**0**	**0**	
2	SPSP-213 College Physics III	3			
	SPSP-273 College Physics Lab III	1			
	ITEF-360CADII	4			
	ITEM-302 Introduction to Statics	4			
	ITEF-300 BASIC Programming	4			
	ITEM-303 Strength of Materials		4		
	ITEE-314 Basic Electricity		4		
	SMAT-420 Calculus for Technologists I			4	
	ITEM-304 Materials Testing			**1**	1988-1989
	ITEM-320 Fluid Power Systems			4	
	Technical Elective		4	3/4	
	"Liberal Arts (Core)		4	4	
	‡ Physical Education	**0**	**0**	**0**	
1 2	Or completion of an appropriate associate degree or equivalent.				
3	"SMAT-421 Calculus for Technologists II	4			
	Technical Elective	4			
	ITEF-436 Engineering Economics	4			
	GLLC-403 Technical Communications	4			
	SMAT-422 Solution of Engineering Problems		4		
	ITEM-440 Applied Thermodynamics		4		
	ITEM-542 HVAC System Engineering		4		
	"Liberal Arts (Core)		4		
4	ITEE-411 Electrical Principles for Design	4			
	ITEM-460 Applied Fluid Mechanics	4			
	ITEM-442 Heat Transfer			4	
	"Liberal Arts (Core)	4			
	ITEM-465 Thermofluid Laboratory			3	
	ITEM-540 Applied Thermodynamics II	4			
	ITEE-412 Electrical Principles for Design II			4	
	"Liberal Arts (Concentration)			4	
5	ITEM-546 Advanced HVAC Systems		4		
	ITEM-522 HVAC Control Systems			4-5	
	Math/Science Elective		4		
	Technical Elective		4	**8**	
	"Liberal Arts (Concentration)		4	4 -	
	"Liberal Arts (Senior Seminar)			2	

"Transfer students will take SMAT-420 or 421 depending on an evaluation of their mathematics background. Graduates will have to meet a minimum of 36 quarter credits of mathematics and science (including credits transferred), and include mathematics SMAT-422 or equivalent. Rearrangement of the above schedule will be allowed to meet the math/science requirements.

•See page 118 for Liberal Arts requirements.

tSee page 176 for policy on Physical Education.

Manufacturing Engineering Technology Department

V. Raju, Chairperson

Manufacturing Engineering Technology, baccalaureate program Leaders in the manufacturing engineer **ing** profession estimate that the present shortage of qualified manufacturing engineers and technologists is between 50,000 and 100,000 people—and this need is increasing. The two principal factors generating this demand are industrial productivity and technological innovations. The rate of increase of productivity in American industry is lagging behind most industrial nations.

Realizing that competitive positions in world markets, domestic markets, and profits are tied to the productivity of manufacturing units, there is considerable effort by industrial organizations to improve their productivity. This nationwide effort is causing organizational and planning changes in many corporations which 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 insure product *manufacturability.*

These efforts to improve productivity have led to the rapid introduction of new, often exotic, processes, equipment, and increased amounts of automation. This factor 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, and flexible manufacturing systems.

The manufacturing engineering technology program is designed to meet the demands of the industry. The program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET) and is operated on the cooperative education plan.

Manufacturing Engineering Technology cooperative education plan

Year	Fall	Winter	Spring	Summer
land 2	RIT	RIT	RIT	Vaction
3	RIT	RIT	Work	Work
4	RIT	Work	RIT	Work
5	Work	RIT	RIT	–

Yr.	MANUFACTURING ENGINEERING TECHNOLOGY, B. TECH. DEGREE	Qtr. Credit Hours			
	5-year schedule of courses for high school graduates	**FALL**	**WTR.**	**SPG.**	**SMR.**
1	SMAM-204 College Algebra & Trigonometry	4			
	GLLC-220 English Composition	4			
	ITEM-2111ntroduction to Materials Technology	4			
	ITEC-210 Engineering Graphics	4			
	SMAM-228 Analytic Geometry		4		
	SPSP-211 College Physics I		3		
	SPSP-271 College Physics Lab I		1		
	ITEF-260 Introduction to CAD		4		
	ITEF-220 Manufacturing Processes		4		
	SPSP-212 College Physics II			3	
	SPSP-272 College Physics Lab II			1	
	ITEF-265 CAD I			4	
	ITEM-212 Metrology			2	
	ITEF-229 Introduction to Technical Communication			3	
	Liberal Arts (Core)			4	
	tPhysical Education	0	0	0	
2	SPSP-213 College Physics III	3			
	SPSP-273 College Physics Lab III	1			
	ITEF-360 CAD II	'4-			
	ITEM-302 Introduction to Statics	4			
	ITEF-300 BASIC Programming	4			
	ITEM-303 Strength of Materials		4		
	ITEE-314 Basic Electricity		4		
	SMAT-420 Calculus for Technologists I			4	
	ITEM-304 Materials Testing			1	
	ITEM-320 Fluid Power Systems			4	
	Technical Elective		4	3/4	
	Liberal Arts (Core)		**4**	4	
	tPhysical Education	0	0	0	
1 **2**	Completion of an appropriate associate degree or equivalent				
3	"SMAT-421 Calculus for Technologists II	4			
	ITEF-403 Machine Elements	3			
	ITEF-405 Materials in Manufacturing	4			
	ITEM-429 Technical Communications	4			
	SMAT-422 Solutions of Engineering Problems		4		
	"Liberal Arts (Core)		4		
	ITEF-420 Manufacturing Processes		4		
	ITEE-411 Electrical Principles for Design		4		
4	ITEE-412 Electrical Principles for Design II	4			
	ITEF-471 Computer Numerical Control	3			
	ITEF-460 Computer-Aided Design	4			
	Technical Elective	3			
	•Liberal Arts (Core)	4			
	ITEM-521 Logic Control Systems			4	
	ITEE-413 Applied Microprocessors			4	
	SMAT-309 Statistics			4	
	'Liberal Arts (Concentration)			4	
5	ITEF-425 Statistical Quality Control II		3		
	ITEF-485 Robots in Manufacturing		4		
	ITEF-436 Engineering Economics			. 4	
	ITEF-475 Computer Aided Manufacturing			4	
	ITEF-472 Tool Engineering			4	
	Technical Elective/Liberal Arts			3-4	
	Technical Elective		3		
	"Liberal Arts (Concentration)			4	
	"Liberal Arts (Senior Seminar)			2	

"Transfer students will take SMAT-420or421 depending on an evaluation of their mathematics background. Graduates will have to meet a minimum of 36 quarter credits of mathematics and science (Including credits transferred), and include mathematics SMAT-422 or equivalent. Rearrangement of the above schedule will be allowed to meet the math/science requirements.

'Seepage 118 for Liberal Arts requirements.

tSee page 176 for policy on Physical Education.

Objectives of the program

The primary objective of the manufacturing engineering technology program is to prepare individuals for professional employment in the manufacturing engineering field. This program is designed to provide the academic skills necessary for applying both today's and tomorrow's manufacturing technologies. These academic skills are enhanced by a full co-op program in manufacturing industries. Throughout the academic program, a large measure of hands-on laboratory experiences related to manufacturing technology is provided.

Curriculum

The manufacturing engineering technology curriculum has been designed with the aid and consultation of professionals in the field. The major emphasis of the program is on computer-integrated manufacturing. Subject matters covered include traditional and non-traditional manufacturing processes, fundamentals of electronics and microprocessors, computer-aided design, computer numerical control, robotics, group technology, computer-aided process planning, material requirements planning, flexible manufacturing systems, quality control, engineering economics, value analysis and plastics.

Admission requirements

Freshmen are admitted by normal RIT procedures with an emphasis given to mathematics and science skills. Those who transfer from two-year colleges should have an AAS degree or equivalent in one of the following majors: manufacturing technology, mechanical technology, management engineering technology, engineering technology, quality control technology, design and drafting technology, electromechanical technology. Students with other backgrounds may have to take additional courses to meet the entrance requirements. The chart shows the sequence of courses in the program for students entering as freshmen and those entering as juniors.

Technical electives

Manufacturing Engineering Technology

ITEF-372 CAD Applications
ITEF-385 Introduction to CAM
ITEF-437 Value Analysis
ITEF-502 Non-traditional Manufacturing Processes
ITEF-510 Process Design
ITEF-450 Plastics Processing
ITEF-491 Production Control

1968-69 EVENING COURSE OFFERINGS - MANUFACTURING ENGINEERING TECHNOLOGY

Couraee: Registration Number	Subject and Credit	Fall	Winter	Spring	Summer
ITEF-403 0617-403-70	Machine Elements (4)	TR 8:30-10:20			
ITEF-405 0617-405-70	Materials in Manufacturing (4)	TR-8:30-10:20			
ITEF-420 0617-420-70	Manufacturing Processes (4)		TR-8:30-10:50		
ITEF-424 0617-424-70	Statistical Quality Control I (4)		MW-8:30-10:2(		
ITEF-425 0617-425-70	Statistical Quality Control II (3)			MW-8:30-10:2C	
ITEF-436 0617-436-70	Engineering Economics (4)			TR-8:30-10:20	TR-8:00-10:00
ITEF-437 0617-437-70	Value Analysis (3)		TR-6-8:00		
ITEF-450 0617-450-70	Plastics Processing (4)	Not Offered in 1988-69			
ITEF-460 0617-460-70	Computer Aided Design (4)	TR-6-8:00			W 5:30-10:20
ITEF-471 0617-471-70	Computer Numerical Control (3)		MW-8:30-10:2<		
ITEF-472 0617-472-70	Tool Engineering (4)			TR-6:00-8:00	
ITEF-475 0617-475-70	Computer Aided Mf. (4)		MW-6:00-8:00		
ITEF-481 0617-481-70	Work Measurement & Simpl. (4)	Not offered 1988-89			
ITEF-485 0617-485-70	Robots in Mfg. (4)			MW-6:00-8:00	
ITEF-491 0617-491-70	Production Control (4)	MW-8:30-10:2<			
ITEF-502 0617-502-70	Non-Trad. Mfg. Processes (3)			MW-6:00-8:00	
ITEF-510 0617-510-70	Process Design (4)	MW-6:00-8:20			
ITEF-526 0617-510-70	Quality Systems (4)	Not offered in 1988-89			
ITEF-530 0617-530-70	Special Topics in CIM (3)	Not offered in 1988-89			

MANUFACTURING ENGINEERING TECHNOLOGY, B. TECH., EVENING PROGRAM

Year	Quarter	Courses
1	Fall	ITEF-405 Materials in Manufacturing SMAT-420 Calculus for Technologists I
	Winter	ITEF-420 Manufacturing Processes SMAT-421 Calculus for Technologists II
	Spring	Liberal Arts Core SMAT-422 Solutions of Engineering Problems
2	Fall	ITEF-403 Machine Elements ITEF-460 Computer-Aided Design
	Winter	GLLC-403 Effective Technical Communications ITEF-471 Computer Numerical Control
	Spring	ITEF-436 Engineering Economics ITEM-521 Logic Controls
3	Fall	ITEE-411 Electrical Principles for Design I Liberal Arts (Core)
	Winter	SMAM-309 Statistics ITEE-412 Electrical Principles for Design II
	Spring	ITEE-413 Applied Microprocessors ITEF-425 Statistical Quality Control
4	Fall	Technical Elective Liberal Arts (Concentration)
	Winter	ITEF-475 Computer Aided Manufacturing Liberal Arts (Concentration)
	Spring	ITEF-472 Tool Engineering ITEF-485 Robots in Manufacturing
5	Fall	Technical Elective Liberal Arts (Concentration)
	Winter	Technical Elective Senior Seminar

lTEF-526 Quality Systems
ITEF-481 Work Simplification and Measurement
ITEF-530 Special Topics in Computer-Integrated Manufacturing
ITEF-599 Independent Study

With departmental approval, technical electives may be selected from existing courses in other RIT colleges.

Evening program
The upper division of this program may be taken on a part-time basis during the evening hours by those who are employed full time and desire to receive an ABET-accredited baccalaureate degree. The lower-division portion of this program may be satisfied by completing the appropriate AAS program in the College of Continuing Education. The actual upper-division program will depend upon the courses taken for the AAS program. The typical evening student requires approximately 13 quarters to complete the upper-division course requirements. In the early quarters, the fundamentals of mathematics, 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 on an alternating year basis. Please check with an advisor when planning your program technical elective content.

School of Food, Hotel and Tourism Management

(96 Years of Service to Hospitality Education)

Francis Domoy, Acting Director

RIT's School of Food, Hotel and Tourism Management offers four programs leading to BS and MS degrees in hospitality-tourism management: food-service management; hotel and resort management; travel management; general dietetics and nutritional care.

The school prepares students for a wide variety of career choices in restaurants, hotels, health-care facilities or travel consulting. A career in the hospitality industries has become highly specialized in today's business world and RIT graduates are in demand.

The four school programs provide a broadly based view of hospitality, tourism and client care through a common core of courses. This approach promotes an understanding of the interrelationships among the food, lodging and travel components and 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; leadership and excellence. The school's first priority is to equip students with these skills and qualities.

Now in its 96th year, RIT's School of Food, Hotel and Tourism Management is one of the nation's leading hospitality-tourism management programs and was recently recognized for its outstanding programs by *Forbes, Travel Weekly, Nation's Restaurant News, Woman's Day* and *Travel Management* magazines.

The curriculum is designed to be fully integrated whereby competencies acquired in earlier courses are further developed in more advanced courses. Students may take electives that contribute to building a strong concept of the total industry by studying accounting, marketing, finance, economics, computer science, business management, behavioral science, nutrition, food preparation, food and beverage service principles, hotel operations, and travel and other topics.

The goal of the school 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.

Objectives
It is the mission of the school to prepare students to excel in their chosen profession by developing:

1. Theoretical and technical knowledge essential to successful attainment of professional, executive level management.
2. The ability to apply knowledge and original thinking to solving management problems.
3. The skills and techniques of leadership.
4. An awareness and desire for a lifetime of learning.
5. An intellectual spirit for constructive thought and action in building a good life and effective citizenship.

Cooperative education
The School of Food, Hotel and Tourism Management requires each student to combine 1,600 hours of practical experience with classroom theory in order to graduate.

Cooperative education (co-op) is one of the many ways students are introduced to hands-on learning and employment in the hospitality and tourism industries. Co-op is usually taken during summer quarters after the freshman and sophomore years, and during any academic quarter in the junior and senior years, except the senior-year, final quarter 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 advisor, 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 the students with the opportunity to apply the theory of classroom instruction to an actual work setting.

Faculty
Faculty members in the School of Food, Hotel and Tourism Management are outstanding in their academic credentials and for their work in industry. They serve in professional and trade associations at the national level, guest-speak frequently, and consult in the fields of their expertise: tourism, marketing, hospitality operations, nutrition and health care.

Advising
Students are assigned to faculty members on an individual basis throughout their academic years. In addition students have access to the school's administrative staff for assistance with registration, records, scheduling and for referral to other RIT support services.

Advisory Council
National industry leaders comprise the Advisory Council, contributing professional and technical expertise to the school's four undergraduate programs and strengthening the development of the School.

Transfer students
Students who have earned an associate degree in a business program prior to enrollment at RIT may normally expect to complete the BS degree in two years, which includes six academic quarters and two required quarters of cooperative education. The school recognizes as fully as possible the past academic accomplishments of each student.

Yr.	FOOD MANAGEMENT	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	0621-210 Introduction to Food, Hotel and Tourism Management	4			
	0621-220 Career Seminar	1			
	0621-314 Sanitation and Safety	2			
	0502-220 English Composition	4			
	1016-225 Algebra for Management Sciences	4			
	8511-210 Introduction to Economics		4		
	0504-332 Literature		4		
	1016-226 Calculus for Management Sciences		4		
	0621-215 Principles of Food Production		5		
	0101-301 Financial Accounting			4	
	0620-213 Nutrition Science			4	
	SBIG-210 Microbiology OR			4	
	SCHG-289 Contemporary Science-Chemistry				
	'Liberal Arts			4	
	tPhysical Education	0	0	0	
	0621-499 Cooperative Education				Co-op
2	0621-321 Menu Planning and Merchandising	4			
	ISMF/ISMH/ISMT Elective		4		
	0106-330 Data Analysis	4			
	0602-200 Survey of Computer Science	4			
	0621-424 Food and Labor Cost Control		4		
	0621-425 Purchasing and Inventory Control		3		
	0621-331 Food Systems Management			5	
	'Liberal Arts		4	12	
	tPhysical Education	0	0	0	
	0101-302 Managerial Accounting	4			
	0621-499 Cooperative Education				Co-op
3	0105-463 Principles of Marketing	4			
	0104-441 Corporate Finance	4			
	0612-426 Training and Supervision in Hospitality Industry	4			
	0102-430 Organizational Behavior		4		
	0621-340 Beverage Operations		3		
	0621-311 Equipment Design & Engineering		4		
	0621-416 Product Development		4		
	•Liberal Arts	4		12	
	0621-499 Cooperative Education			Co-op	Co-op
4	0621-430 Restaurant Management	5			
	ISMF/ISMH/ISMT Electives	4	4	4	4
	0621-511 Banquet and Catering Management		4		
	Free Electives		4		4
	ISMF-341 Beverage Operations Lab	2			
	'Liberal Arts (Senior Seminar)		2		
	'Liberal Arts	4	4	8	4

"See page 115 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Facilities

State-of-the-art equipment and laboratories are available to all students in the School of Food, Hotel and Tourism Management to enhance their educational experiences. Henry's, a full-service, licensed restaurant, provides an excellent training ground for students who manage special luncheons and dinners with the help of computerized beverage and point-of-sale systems. Its food lab is commercially equipped for developing, testing and evaluating new food products and testing equipment.

Information management is a critical element in hospitality, travel and tourism. The school is fortunate to have for instruction the American Airlines SABRE computerized reservation and accounting systems in the live mode. Computer laboratories and the training studio allow students to prepare for the technology they will encounter on the job.

Programs of study in foodservice management

The foodservice industry employs more people than any other in the nation, and will continue to do so as the public demands more services. Foodservice offers an array of work places located far and wide: restaurants from full-service to cafeteria; fast-food and special chain operations; hotel fine dining and catering; clubs; contract services for manufacturing; business firms; recreation and sports centers; education, health and life care institutions; retail stores; governmental agencies; and food vending.

Students in foodservice management experience a sampling of these foodservice sectors by cooperative education. By graduation students will accumulate more than 1,600 hours of work experience, more than any other four-year hospitality management 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 is designed to prepare students for management by lab experience in Henry's, the school's full-service, licensed restaurant. They rotate through all of the kitchen, dining room and bar positions in the Food Systems Management, Banquet and Catering Management and Beverage Operations courses.

Students learn basic principles and procedures of nutrition; sanitation; menu planning and merchandising; product development; equipment design; food production; presentation and service; purchasing; cost control; and the restaurant management of Henry's. The program requires several management topic courses including accounting, computer science, data analysis, personnel training, and organization behavior. These professional and business courses are balanced by a strong component of liberal arts and science.

The first student chapter chartered by a state restaurant association is available to foodservice management students. The New York State Restaurant Association's goal is to foster inter change of ideas between industry and students and professional growth in organizational and social skills. Students with junior standing are encouraged to attend the National Restaurant Association Show in Chicago each year.

Hotel and resort management

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

The program is designed to build student skills with a balanced academic program of the basic principles of hotel and restaurant operations, business and financial management, and liberal arts, together with paid work experience (co-op) in four quarters, hands-on class projects, laboratories and school activities. Specialized courses include resort and recreation enterprises; hotel marketing; meeting planning and convention service; hotel and travel law; personnel and training; catering and front desk operations; and guest accounting. Industry professionals regularly offer their expertise in all of the program courses.

Students develop communication skills through participation in the student chapter of the Hotel Sales & Marketing International Association

(HSMAI). In 1988 RIT HSMAI students hosted the national student chapter convention—an intensive learning experience. Students with senior standing are encouraged to attend the International Hotel/Motel and Restaurant Show in New York City in November.

Travel management

The dynamic growth of modern travel and tourism has created many technical problems for the traveling public and with them 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 are increasingly relying upon the travel professional to help guide them wisely and honesdy. Travel agencies and travel counselors have an important impact on tourist economics and on foodservice, lodging, transportation and leisure time enterprises that supply services to tourists. Managers of tourist businesses and destination marketing organizations such as visitor and convention bureaus also assist the public in meeting their travel and tourism needs. In addition, tour operators and meeting managers provide the public with tourism opportunities and arrange trips, conferences, and seminars.

Travel management combines a study of specialized courses in travel management with a sound general education. In addition to the specialty courses, students are provided a broad-based curricular approach with courses in accounting, management principles, marketing, business law, foreign languages, and the computer sciences. 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. This career education orientation provides both the four-year and transfer student with a balance of theoretical classroom-based instruction with the experiential opportunities that are furnished by cooperative education.

Equipped with this program of academic study and work experience, students in travel management prepare for careers in corporate travel, consulting and professional meeting management, as well as management and marketing positions with state tourism agencies, visitor and convention bureaus, and group tour companies. Employment opportunities are also excellent with airline companies, hotels, resorts, retail travel agencies and other leisure time businesses.

Yr.	HOTEL AND RESORT MANAGEMENT	Otr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
	ISMF-210 Introduction to Food, Hotel and Tourism Management	4			
	ISMF-220 Career Seminar	1			
	ISMF-215 Principles of Food Production		5		
	GLLC-220 English Composition	4			
	SMAM-225 Algebra for Management Sciences	4			
	GSSE-210 Introduction to Economics			4	
	GLLL-332 Uterature		4		
1	SMAM-226 Calculus for Management Sciences		4		
	ISMF-314 Sanitation and Safety	2			
	BBUA-301 Financial Accounting			4	
	ISMD-213 Nutrition Science			4	
	SBIG-210 Microbiology OR			4	
	SCHG-289 Contemporary Science-Chemistry				
	"Liberal Arts		4		
	‡ Physical Education	0	0	0	
	ISMF-499 Cooperative Education				Co-op
	BBUQ-330 Data Analysis		4		
	ICSS-200 Survey of Computer Science	4			
	ISMH-400 Resort and Recreation Enterprises	4			
	ISMH-401,402,403,404,405,406 Resort &Rec.Ent. Lab. . . .		1		
2	BBUA-302 Managerial Accounting	4			
	ISMF-331 Food Systems Management			5	
	ISMF/ISMH/ISMT Elective		4		
	"Liberal Arts		4	8	
	‡ Physical Education	0	0	0	
	ISMF-499 Cooperative Education				Co-op
	ISMF-424 Food and Labor/Cost Control		4		
	BBUM-463 Principles of Marketing	4			
	ISMF-426 Training and Supervision in the Hospitality Industry . .	4			
	ISMH-423 Hotel Operations	5			
	ISMT-220 Travel Intermediaries	4			
	BBUB-430 Organizational Behavior		4		
3	ISMF-340 Beverage Operations		3		
	ISMH-420 Hotel and Travel Law		4		
	"Liberal Arts		4		
	ISMF-499 Cooperative Education			Co-op	Co-op
	BBUF-441 Corporate Finance	4			
	ISMH-412 Maintenance Hotel/Resort Properties	4			
	ISMF/ISMH/ISMT Elective	4		4	
4	ISMF-341 Beverage Operations Lab	2			
	ISMF-511 Banquet and Catering Management		4		
	ISMH-450 Hotel Marketing and Sales Management . . .		4		
	Free elective			4	
	* Liberal Arts (Senior Seminar)	2			
	"Liberal Arts		8	4	12

'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

American Airlines SABRE Systems Available to the students in the School of Food, Hotel and Tourism Management in live mode are the automated reservation and accounting systems designed by American Airlines to allow travel planners and meeting managers to serve the public faster, while handling the complex details of their business more efficiently. The reservation system, SABRE, enables travel professionals to give their clients immediate confirmation for flights operated by airlines worldwide.

With SABRE the students are seated at SABRE reservation sets that use video screens and typewriter-like keyboards and are linked directly to American's worldwide travel information system. This provides access to accommodations at hotels—domestic and international, major car rental firms, and to wholesale tour operators who design tours to vacation destinations such as Hawaii, the Caribbean, Mexico. Canada and the U S mainland

SABRF. provides the student with an immediate display of flights and seat availability for a desired departure time The system also performs fare quotations, currency conversions, and, with the aid of the Telenet printers, pre pares a printed ticket, a comprehensive invoice and a passenger itinerary

Students are also versed in the use of SABRE's special file designed for the frequent business traveler Known as STARS (Special Travelers Account Record System), the file contains not only addresses and telephone numbers, but individual preferences in flight times, aircraft, seating, menus, etc. It will also automatically "remember" the traveler's customary requests with regard to hotel reservations, car rentals, billing procedures, and much more.

Yr.	TRAVEL MANAGEMENT	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
	ISMF-210 Introduction to Food, Hotel and Tourism Management	4			
	ISMF-220 Career Seminar	1			
	GLLC-220 English Composition	4			
	SMAM-225 Algebra for Management Sciences	4			
	GLLL-332 Literature	4			
	GSSE-210 Introduction to Economics		4		
1	SMAM-226 Calculus for Management Sciences		4		
	ICSS-200 Survey of Computer Science		4		
	ISMT-210 Introduction to AA SABRE Reservations			4	
	BBUA-301 Financial Accounting			, 4	
	ISMF/ISMH/ISMT Elective			4	
	"Liberal Arts		4	4	
	‡ Physical Education	0	0	0	
	ISMF-499 Cooperative Education				Co-op
	BBUQ-330 Data Analysis		4		
	ISMT-201 Travel Lab I	3			
	ISMH-400 Resort and Recreation Enterprises	4			
	ISMH-401,402,403,405,406 Res. & Rec. Ent. Lab	1			
	BBUA-302 Managerial Accounting	4			
	ISMH-423 Hotel Operations		5		
2	ISMT-202 Travel Lab II		2		
	Free elective		4		
	ISMT-220 Travel Intermediaries			4	
	ISMF/ISMH/ISMT Electives			8	
	'Liberal Arts	4		4	
	‡ Physical Education	0	0	0	
	ISMF-499 Cooperative Education				Co-op
	BBUM-463 Principles of Marketing	4			
	ICIC-426 Training and Supervision in Hospitality Industry	4			
	ISMH-420 Hotel and Travel Law	4			
	ISMT-320 Passenger Transportation Systems	4			
	ISMT-303 Travel Lab III		2		
3	BBUB-430 Organizational Behavior		4		
	ISMT-370 Passenger Transportation Policy			4	
	'Liberal Arts		4	8	
	ISMF/ISMH/ISMT Electives		4	4	
	ISMF-499 Cooperative Education				Co-op
	BBUA-431 Cost Accounting OR				
	BBUF-441 Corporate Finance	4			
	ISMT-410 Tourism Consumption Analysis	4			
	ISMF/ISMH/ISMT Electives	4		4	
4	ISMF-499 Cooperative Education		Co-op		
	ISMH-450 Hotel Marketing and Sales Management			4	
	ISMT-550 Seminar in Travel Management			4	
	"Liberal Arts (Senior Seminar)	2			
	'Liberal Arts			4	12

'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

The School of Food, Hotel and Tourism Management's utilization of the American Airline's SABRE System truly represents a whole new dimension in hospitality and tourism education.

General dietetics and nutritional care
Today's public is becoming increasingly interested in nutrition requirements for good health and long life. People are concerned about balanced menus away from home and about special diet menu selection availability for persons with serious ailments. Physical fitness centers seek educated advice about meal planning.

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 food needs. Dietitians are health professionals who apply the science and art of human nutrition.

The fully accredited general dietetics and nutritional care program offers a challenging curriculum that prepares students for diverse career opportunities. From their base of knowledge about nutrition, registered dietitians practice in many settings. Possible career paths may be developed in private practice; community nutrition and public health; wellness and fitness programs for sports; education and corporations; clinical dietetics or food management in hospitals and long-term care facilities; research for clinical, education or food manufacturing operations; nutrition education; restaurant consulting; and writing for publications.

Dietetics program options
Today industry and institutions are looking for dietitians with strong management skills. Two options in the general dietetics and nutritional care program are offered: general dietetics and the Coordinated Undergraduate Program (C.U.P.) in general dietetics. These options combine clinical and business courses so that students become prepared for either arena.

All RIT dietetics students are enrolled in the traditional program in general dietetics during the first two years. Upon completion of the necessary pre-professional (first and second year) courses, students may apply for admission into the coordinated dietetics program. Applications for the Coordinated Undergraduate Program must be submitted by March 1 to be considered for admission into the professional phase the following September.

The general dietetics curriculum combines courses in physical, biological and social sciences; nutrition in health and disease; food principles; management, accounting and finance; and a required component of liberal arts.

General dietetics: The program in general dietetics leading to a BS degree meets the education requirements of the American Dietetic Association. Four-year students must complete three quarters of approved cooperative work experience. To become certified as a registered dietitian (RD), students also will need to complete an approved clinical experience and pass the qualifying comprehensive examination of the American Dietetic Association.

Coordinated program option: This option combines the undergraduate curriculum and planned clinical study to meet the academic and clinical requirements for membership in the American Dietetic Association (ADA).

This option also is planned to integrate formsd teaching and over 900 hours of planned, supervised clinical experience in hospitals, nursing homes, school food services and community health agencies. Clinical facilities in several large hospitals provide a comprehensive health care environment for student learning. Academic and clinical phases are taught together to reinforce each other. Learning experience involves team teaching by RIT faculty and clinical instructors, each contributing their expertise in the profession.

Co-op is not required of students in C.P. because the clinical hours planned for the junior and senior years establish eligibility for students to take the regis-

Yr.	GENERAL DIETETICS' & NUTRITIONAL CARE PLAN IV	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
	ISMF-215 Principles of Food Production		5		
	"SCHG-201,221 Survey of General Chemistry (plus lab)	4			
	GLLC-220 English Composition	4			
	SMAM-225 Algebra for Management Sciences	4			
	BBUA-301 Financial Accounting			4	
	GSSE-210 Introduction to Economics		4		
1	"SCHG-202,222 Survey of Organic Chemistry (plus lab)		4		
	GLLL-332 Literature		4		
	ISMD-213 Nutrition Science	4			
	ICSS-200 Survey of Computer Science			4	
	"SCHG-203 Biochemistry I			4	
	Liberal Arts			4	
	Physical Education	0	0	0	
	ISMF-321 Menu Planning and Merchandising	4			
	"SBIG-210 Microbiology	4			
	"SCHG-204 Biochemistry II	4			
	ISMF-425 Purchasing and Inventory Control		3		
	BBUQ-330 Data Analysis		4		
2	SBIG-211,212 Human Biology I, II, plus lab		4	4	
	ISMF-314 Sanitation and Safety		2		
	ISMF/ISMH/ISMT Elective			4	
	Liberal Arts	4	4	8	
	ISMF-499 Cooperative Education				Co-op
	Physical Education	0	0	0	
	ISMF-416 Product Development	4			
	ISMF-311 Equipment Design and Engineering	4			
	ISMF-331 Food Systems Management		5		
3	BBUB-430 Organizational Behavior		4		
	ICIC-426 Training and Supervision in the Hospitality Industry . .		4		
	Liberal Arts	8	4		
	ISMF-499 Cooperative Education			Co-op	Co-op
	ISMF-424 Food and Labor Cost Control	5			
	"ISMD-525 Advanced Nutrition/Diet Therapy I	5			
	"Liberal Arts (Senior Seminar)		2		
	"ISMD-526 Advanced Nutrition/Diet Therapy II		4		
4	""ISMD-554 Nutrition in Life Cycle		4		
	ICIC-519 Educational Methods			4	
	"ISMD-550 Community Nutrition			4	
	ISMF-511 Banquet and Catering Management			4	
	Liberal Arts	4	8		
		4		4	

'Changes in the dietetics program are subject to approval by the American Dietetics Association.
"These courses offered ONL Y in the quarters listed on the schedule.
'See page 118 for Liberal Arts requirements,
tsee page 176 for policy on Physical Education.

Yr.	GENERAL DIETETICS AND NUTRITIONAL CARE COORDINATED PROGRAM (CP)	Quarter Credit Hours			
		FALL	WTR.	SPG.	SMR.
	ISMD-402 Dietetic Environment	4			
	ISMF-416 Product Development	4			
	ISMF-311 Equipment Design & Engineering	3			
	ISMF-331 Food Systems Management		5		
3	ICIC-519 Educational Methods			4	
	BBUB-430 Organizational Behavior	4			
	"Liberal Arts		4		
	ISMF-424 Food and Labor Cost Control			4	
	ICIC-426 Training and Supervision in the Hospitality Industry . .		4		
	ISMD-551 Food Systems Management II (Clinical Course)			8	
	ISMD-560 Clinical Dietetics I	4			
	ISMD-561 Clinical Dietetics II	4			
	Liberal Arts (Senior Seminar)	2			
	ISMD-562 Clinical Dietetics III		4		
4	ISMD-563 Clinical Dietetics IV		6		
	ISMD-554 Nutrition in Life Cycle		4		
	ISMD-550 Community Nutrition			4	
	ISMF-511 Banquet and Catering Management			4	
	'Liberal Arts	8		8	

"Changes in the dietetics program are subject to approval by the American Dietetics Association.
'See page 118 for Liberal Arts requirements.

tered dietitian qualifying examination upon graduation.

Completion of this option leads to a bachelor of science degree plus ADA membership. Successful completion of a national examination qualifies the member to become a registered dietitian (RD).

Transfer credit

Two-year transfer program for food-service management, hotel and resort management, and travel management. Students who have earned an appropriate associate degree or its equivalent prior to enrollment at **RIT** may normally expect to complete the requirements for the BS degree in two years which includes six academic quarters of cooperative education.

Transfer students must complete a minimum of 102 quarter credit hours with an earned minimum grade point average of 2.0 and two quarters of approved cooperative education assignments.

Transfer students with less than two years of college or from other educational backgrounds can be accommodated. The amount of transfer credit will be determined by an evaluation of the individual's transcript.

In every instance, it is the policy of the college to recognize as fully as possible the past academic accomplishments of each student.

Two-year transfer program for coordinated dietetics. RIT makes every effort to facilitate transfer credit. Due to specific areas of study required by the American Dietetic Association and **RIT,** transfer students applying for admission to the professional phase of C.P. in dietetics must meet course prerequisites listed in the pre-professional phase.

The following areas of study must be completed:

- Food and Nutrition Principles
- General and Organic Chemistry
- Biochemistry **I**
- Physiology
- Management Courses: Mathematics, Accounting and Statistics
- Economics
- TOTAL of 24 credit hours of Liberal Arts (including Introduction to Sociology)

Applicants are required to have a minimum grade point average of 2.5 from two years of basic professional courses before they are considered for admission in the coordinated program.

Students who are not accepted in the coordinated program may be admitted to the traditional program in general dietetics. Due to the special profes-

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sional requirements of the American Dietetic Association, the amount of transferable credit and estimated time to complete work for the BS degree must be determined by evaluation of each individual's transcript.

Course descriptions
For a complete outline of courses offered at RIT, please request the Course Description Catalog from the Admissions Office.

Department of Packaging Science

David L. Olsson, Director

Packaging Science, baccalaureate program
The Packaging Science program, leading to the bachelor of science degree, is broadly interdisciplinary providing educational opportunities for men and women seeking careers in the multi-faceted packaging industry.

Graduates are prepared for initial employment in such areas as package engineering development, sales, purchasing, structural design, production, research, and marketing.

Packaging is a multi-billion dollar industry exhibiting dynamic growth and providing employment for many thousands of men and women with wide-ranging skills and expertise.

Since the end of World War II the development of a package for a given product has become increasingly complex, involving input from many areas of business and from people with diverse backgrounds. This has resulted in the need for specially trained professionals able to work with concepts, individuals, materials, and machines. Qualified persons in this area are in demand and find themselves in a rapidly changing, challenging career. The RIT program trains people for this exciting profession.

The degree program in packaging science was developed because of a close and well-established relationship between the packaging industry and Rochester Institute of Technology over many years.

Packaging has become increasingly related to total marketing concepts; it has even greater dependence upon new developments in materials and processes. Therefore, the industry requires management personnel with strong backgrounds in business, engineering, science and the creative dimension.

Yr.	BS DEGREE IN PACKAGING SCIENCE-TECHNICAL OPTION	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	IPKG-201 Principles of Packaging	4		
	IPKG-301 Engineering Design Graphics		3	
	IPGK-311 Packaging Materials I			3
	SMAM-204 Modern Algebra	4		
	SMAM-214,215 Introduction to Calculus		3	3
	SGHG-208,209 College Chemistry	4		4
	GLCC-501 Effective Speaking			4
	'Liberal Arts (Foundation)	4	8	4
	tPhysical Education	0	0	0
2	IPKG-310 Methods of Evaluation	2		
	IPKG-312 Packaging Materials II	3		
	IPGK-321 Rioid Containers		4	
	IPKG-322 Flexible Containers . . .			4
	ICSA-205 Computer Techniques			3
	ITEF-424 Statistical Quality Control I			4
	SCHO-231,232 Organic Chemistry	3	3	
	SCHO-235,236 Organic CHemistry Lab	1	1	
	'Liberal Arts (Foundation)	4	4	4
		4	4	
	JPhysical Education	0	0	0
3	IPKG-401 Career Seminar		1	
	IPKG-420 Technical Communication		3	
	IPKG-431 Packaging Production Systems	4		
	IPKG-432 Packaging for Distribution		4	
	IPKG-433 Packaging for Marketing			4
	SPSP-211,212,213 College Physics	3	3	
	SPSP-271,272,273 College Physics Lab	1	1	1
	SPSP-341 Foundations of Scientific Thinking	2		
	PPRT-200 Introduction to Printing	3		
	BBUB-430 Organizational Behavior			4
	"Liberal Arts (Concentration)	4	4	4
4	IPKG-562 Packaging Regulations		3	
	IPKG-585 Shock and Vibration	4		
	Professional (Packaging) Electives		4	4
	BBUM-463 Principles of Marketing		4	
	"Liberal Arts (Electives and Senior Seminar)	6	4	4
		6		6

'See page 118 for Liberal Arts requirements
(See page 176 for policy on Physical Education.

Characteristics of the program
The program has these characteristics:

1. It is career oriented—the graduate is ready to enter directly into a position of responsibility.

2. It is interdisciplinary—the student becomes familiar with the many facets of packaging through courses in several RIT colleges.

3. It is flexible—the program offers two options, management and technical, with ample opportunity for electives according to interest.

4. It is representative of industry needs—the content developed with the assistance of the Rochester Area Packaging Association, consultants from the packaging industry, and educational specialists.

5. It is adaptable to a modified cooperative plan, used widely in other RIT programs.

Admission requirements
The four-year BS degree program considers for admission high school graduates who meet the following requirements: English, 4 years; mathematics, elementary algebra and either plane geometry or intermediate algebra; science, one year. Candidates are evaluated in relation to career objectives, designated option, and other indications of potential success in the program.

» Upper division (transfer)
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 from this point in their education directly into a chosen career field. Some candidates now in four-year colleges will find in the packaging science program a career opportunity with developing potential. Associate degree holders (AA, AS, AAS) have courses arranged to meet the requirements of the program and to correct deficiencies resulting from work taken at other institutions not offering the courses required for graduation. With a selective choice of electives by students in the two-year colleges, it is possible to complete the packaging science curriculum in two additional years at RIT.

Yr.	BS DEGREE IN PACKAGING SCIENCE - MANAGEMENT OPTION	Qtr. Credit Hour*		
		FALL	WTR.	SPG.
1	IPKG-201 Principles of Packaging	4		
	IPKG-301 Engineering Design Graphics		3	
	IPGK-311 Packaging Materials I			3
	ICSA-200 Survey of Computer Science	4	3	
	SCHG-201,221 Survey of General Chemistry/Lab	4		
	SCHG-202,222 Survey of Organic Chemistry/Lab		**4**	
	SMAM-204 College Algebra			4
	GSSE-301,302 Principles of Economics I. II		**4**	4
	"Liberal Arts (Foundation)__.	**4**	4	4
	tPhysical Education	0	0	0
2	IPKG-310 Methods of Evaluation	2		
	IPKG-312 Packaging Materials II	3		
	IPGK-321 Rigid Containers		4	
	IPKG-322 Flexible Containers			**4**
	SPSP-211,271 College Physics/Lab	4		
	SPSP-341 Foundations of Scientific Thinking		2	
	PPRT-200 Introduction to Printing	3		
	BBUA-301 Financial Accounting		**4**	
	GLCC-501 Effective Speaking			4
	"Liberal Arts (Foundation)	**4**	**8**	**4**
				3
	JPhysical Education	0	0	0
3	IPKG-401 Career Seminar		1	
	IPKG-420 Technical Communication	3		
	IPKG-431 Packaging Production Systems	**4**		
	IPKG-432 Packaging for Distribution		**4**	
	IPKG-433 Packaging for Marketing			**4**
	ITEF-424 Statistical Quality Control			4
	BBUB-430 Organizational Behavior			**4**
	BBUM-463 Principles of Marketing	4		
	"Liberal Arts (Concentration)	**4**	**4**	**4**
			3	
			4	
4	IPKG-562 Packaging Regulations		3	
	IPKG-585 Shock and Vibration	3		
	Professional (Packaging) Electives		**4**	**4**
	"Liberal Arts (Electives and Senior Seminar)	6	**4**	6
	Management Electives	4		**4**
		4	**6**	**4**

"Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Principal field of study
For students matriculated in the interdisciplinary Packaging Science program, the principal field of study is defined to be all courses in the Packaging Science Department as well as the required courses in the College of Science for the technical option, and the required courses in the colleges of Business and Science for the management option. Matriculated students not maintaining a 2.0 cumulative grade point average in their principal field of study are subject to academic probation or suspension according to Institute policy.

Department of Military Science and Reserve Officers' Training Corps (ROTC)

LTC Thomas D. Reddick, Professor of Military Science

Overview
RIT offers full-time students from all degree fields the opportunity to enroll in our program. Participation in the program includes classroom instruction, laboratory practicums, physical training, and some weekend field training exercises. RIT students who join the Reserve Officers' Training Corps become cadets in a dynamic and challenging aspect of life at RIT. The title of cadet carries with it the potential for many rewards and responsibilities as members of the college community. Annual social events include a formal dinner in the Fall Quarter and a Spring Quarter Military Ball. Army cadets also assist in the fall student orientation, demonstrations of military training throughout the academic year, special events geared towards fostering community relations and fund raising for worthy charities. Army ROTC extracurricular activities include adventure training, pistol team, rappelling, cross-country skiing, rafting exercises, survival training, and numerous field events throughout the year.

The Department of Military Science and Army ROTC offers a unique educational experience. A student is exposed to a curriculum that cannot be obtained through any other source. Modern weapon systems, military tactics and leadership experiences are just a part of the total program. Through this program a college graduate acquires the knowledge and skills to lead the men and women of today's modern Army.

The program is divided into two parts: The Basic Course (Freshman/ Sophomore years) and the Advanced Course (Junior/Senior years).

Financial benefits
A subsistence allowance of $100 per month is provided, tax free, directly to each junior- and senior-year ROTC cadet throughout the school year. This, plus pay for Advanced Camp attendance, amounts to over $2,500 for the last two years of college.

Scholarship opportunities
Our program offers each student the opportunity to compete for two- and three-year scholarships during the freshman and sophomore years. These scholarships are awarded based on academic strength and leadership potential. Both enrolled cadets and non-enrolled students may apply for this program.

Cooperative education (Co-op)
Students enrolled in ROTC also are eligible to apply for co-op positions through the Department of the Army Scientific and Engineering Co-op Program at a wide variety of installations around the country. The ROTC curriculum is very compatible with RIT's co-op program.

Basic course
The Basic Course is available throughout the freshman and sophomore years. During this period, non-scholarship students have absolutely no military service obligation. The curriculum is flexible and is designed to develop self-confidence, to test responsibility and to develop leadership abilities. Freshmen and sophomores participate approximately two hours per week. A student may sample ROTC at any time within his or her first two years. Cadets enrolled in military science study basic military organization, tactics and history. This complete military experience qualifies a cadet for enrollment in the Advanced Course, scholarships, airborne training, summer employment, air assault training, and many other opportunities to gain valuable on-the-job experiences.

Summer camp program
A two-year program is offered to all qualified students with two academic years remaining who did not previously participate in the Basic Course. Students in this program attend a six-week Basic Summer Camp between their sophomore and junior years. Upon successful completion of the basic camp, the student may be enrolled in the Advanced Course for the last two years. It should be noted that two-year scholarships are available on a competitive basis during the Basic Camp. Interested students should begin processing applications for this program early in the Winter Quarter of their sophomore year.

Veterans
Students with prior military service and members of the Army National Guard and Army Reserve are eligible to be considered for entry into the Advanced Course once they have completed one year of college.

Advanced course
The Advanced Course is conducted during the last two years (three years if you co-op) of college and includes attendance at the ROTC Advanced Camp, normally between your junior and senior years. Military Science Department classes during the Advanced Course serve as a prelude to subsequent instruction at specific Army Service Schools. Advanced Course ROTC cadets perform in leadership positions with a cadet company and may participate in and/or lead various training activities.

The program includes an annual trip to Fort Drum, N.Y. Usually scheduled during April, this exercise is conducted in preparation for the Advanced Camp. The Advanced Camp at Fort Bragg, N.C. trains and evaluates thousands of cadets annually from all schools on the Eastern Seaboard of the United States. The six-week Advanced Camp gives each participant an opportunity to plan, organize and lead one's peers through a vigorous and challenging training program. Attendees are paid travel expenses and a salary for this intellectually and physically rewarding experience.

After Advanced Camp, selected cadets have the opportunity to participate in the Cadet Troop Leader Training Program for an additional two or three weeks in Active Army units in leadership positions throughout the U.S. and overseas.

Yr.	DEPARTMENT OF MILITARY SCIENCE FOUR-YEAR PROGRAM	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1 MS 1	|MMSM-201 Introduction to Military Science	2		
	‡MMSM-202 Applied Military Dynamics		2	
	iMMSM-203 Military Heritage			2
2 MS II	"MMSM-302 Psychology and Leadership	2		
	•MMSM-303 The Military and American Society		2	
				2
3 MS III	"MMSM-401 Military Tactics	3		
	*MMSM-402 Military Communications		3	
	"MMSM-403 Military Operations			3
4 MS IV	*MMSM-501 Combined Arms Operations	3		
	"MMSM-502 Military Administration and Logistic Management		3	
	"MMSM-503 Military Ethos			3
	MMSM-510 Senior Seminar			2

" A Leadership Lab, which is conducted on a weekly basis for one hour, is an integral part of each course offered throughout the year. Class 1, Lab 1 = Credit 2, orClass2, Lab 1 = Credit 3.
‡ Completion meets physical education requirements.

Yr.	DEPARTMENT OF MILITARY SCIENCE TWO-YEAR PROGRAM BASIC CAMP/ADV. PLACEMENT/SUMMER COMPRESSION	Qtr. Credit Hours		
		FALL	WTR.	SPG.
3 MS III	•MMSM-401 Military Tactics	3		
	*MMSM-402 Military Communications		3	
	"MMSM-403 Military Operations			3
4 MS IV	"MMSM-501 Combined Arms Operations	3		
	"MMSM-502 Military Administration and Logistic Management		3	
	"MMSM-503 Military Ethos			3
	MMSM-510 Senior Seminar	2		

" A Leadership Lab, which is conducted on a weekly basis for one hour, is an integral part of each course offered throughout the year. Class 1, Lab 1 = Credit 2, orClass2, Lab 1 = Credit 3.

Airborne (parachute), Air Assault (helicopter) and Ranger Training also are available on a competitive basis to cadets in the upper division of ROTC. RIT cadets may earn their badges as parachutists, air assaultists, or rangers and become fully qualified to be assigned duties in these activites after commissioning.

Professional Military Education
In addition to the Military Science curriculum and the Fort Bragg Advanced Camp, each cadet must complete a course in the following designated fields of study.

1. Written Communication
2. Military History
3. Human Behavior
4. Foreign Language (scholarship cadets only)

After graduation
Today's ROTC graduates are working in commissioned officer positions that range from commanding units overseas to serving in National Guard and Army Reserve units throughout the United States.

Graduate school opportunities
Commissioned officers may have an opportunity to pursue graduate work in their chosen discipline. Normally the cost of a graduate degree or attendance at a professional school is at the individual's expense. Certain specialties may be paid for by the U.S. Army.

Technological enrichment program
Students who plan to pursue graduate studies in high-technology areas can compete for a full graduate school scholarship through the Army in their senior year of college.

For additional information
For additional information about broadening your career options through Army ROTC, visit or call the Department of Military Science on the third floor of the George Eastman Building (475-2881 or -2882).

AFROTC—Air Force Reserve Officer Training Corps, Department of Aerospace Studies

Col. William (Bill) Savage
Professor of Aerospace Studies

Background
Air Force Reserve Officer Training Corps (AFROTC) opened at RIT in September 1985. Since 1947 AFROTC has afforded graduating college students an appointment as commissioned officers in the United States Air Force. There are three methods to obtain a commission as an officer in the Air Force: through the Air Force Academy, the Air Force Officer Training School, and our Air Force ROTC program. Participation in the ROTC program allows college students a firsthand view of the Air Force while attending the college of their choice. Activities are extremely varied and enriching, encompassing classroom instruction, leadership experiences, visits to Air Force bases, summer field training, flight instruction for those qualified, physical fitness, and more.

Characteristics
The Department of Aerospace Studies at RIT has designed an approach to its curriculum totally compatible with the normal four-year curriculum in some RIT colleges, and additionally, compatible with the five-year cooperative education program in existence at a larger number of colleges within the Institute. RIT and the Department of Aerospace Studies believe the program will develop very well-rounded individuals fully prepared to enter into their chosen career fields and to become future leaders in our society.

Four-year program
This program has three distinct parts: the General Military Course (GMC), the Professional Officer Course (POC), and the Summer Field Training.

Cadets normally enter the four-year program directly from high school. The GMC is taken by freshman and sophomore students. Cadets entering this curriculum incur no military commitment. Air Doctrine, Air Force Mission Structure, Organization, the Nature of Conflict, Air Power Development, National Security, the Evolution of Air Power and more are studied. Successful completion of the GMC requirements and the four-week field training exercise qualifies a student to apply for entry into the POC.

The POC is the advanced Aerospace Studies curriculum and is conducted during the junior and senior year at RIT. The curriculum prepares cadets for entry into the Air Force as commissioned second lieutenants. Fundamentals of leadership and management, ethics, staffing, planning, coordinating, the need for national security, policy direction and implementation, and actual leadership case studies are examined.

Additionally, in both GMC and POC curriculum, several instructional blocks on written and oral communicative skills are taught.

Every cadet must complete a Summer Field Training encampment, normally between the sophomore and junior year. In the four-year program, the summer exercise is four weeks in duration. The curriculum and activities at summer field training educate and evaluate a student's leadership potential and qualify the cadet for entry into the POC. The training program includes leadership evaluation exercises, orientation, survival training, officer training, confidence courses, aircraft and aircrew orientation, physical training and more.

Leadership and management experience is gained in the Air Force ROTC curriculum through a series of Leadership Laboratories. The labs are conducted in the Fall, Winter and Spring quarters throughout a cadet's four- or five-year college curriculum. Cadets in the GMC are afforded cadet enlisted rank while POC cadets hold cadet officer rank. 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 Leadership Laboratory experience.

The four-year program is very comprehensive. Spirited and well-rounded Air Force officers are the result.

Two-year program
This program is specifically designed to allow college students to join the cadet corps with as little as two years remaining at college. The General Military Course (GMC) material and leadership laboratories are obviously not taught, but instead cadets receive all GMC curriculum and laboratory experience in an extended six-week summer field training exercise, usually conducted between their sophomore and junior years. Successful completion of the summer camp qualifies cadets for entry into the Professional Officer Course, referenced above in the four-year program. Cadets then complete their remaining AFROTC requirements as members of the Professional Officer Corps.

Other programs
Several other programs and activities are afforded cadets in both the two- and four-year Air Force ROTC programs. They are offered to highly competitive cadets to further develop the officer "whole person" concept. These programs include: airborne training with the U.S. Army, flight instruction, Advanced Training Program (an on-the-job training program at selected Air Force bases), base visitations, a Light Aircraft Orientation Program, and Arnold Air Society.

Physical education graduation requirements
Physical education graduation requirements can be satisfied by completion of the Department of Aerospace Studies Leadership Laboratories. Students must be enrolled in Air Force ROTC (the two- or four-year program) to enroll in the leadership laboratories.

Qualifications and selection procedure
To become a member of the Air Force ROTC team requires many different and varied qualifications. Some are very simply met, others are more complex, involving Air Force Officer Qualifying Testing, physicals, interviews and selection boards. Please contact the Air Force ROTC office for complete details and learn how you may qualify. The phone number is (716) 475-5196.

Yr.	AFROTC - DEPARTMENT OF AEROSPACE STUDIES	Qtr. Credit Hours		
		FALL	WTR.	SPG.
	IMAF-210,211,212 AirForceTodayI.il, III	1	1	1
	IMAF-201,202,203 Leadership Lab I	1	1	1
2	GLAA-201,202,203 Hist, of Air Power I, II, III	1	2	1
	IMAF-301,302,303 Leadership Lab II	1	1	1
3	BBUB-310,311 Air Force Ldr. & Mgmt. I, II	5		5
	IMAF-401,402,403 Leadership Lab III	1	1	1
4	GSSM-401,402 Nat'l Security Forces 1, II	5		4
	IMAF-404,405,406 Leadership Lab IV	1	1	1
5	IMAF-501,502,503 Leadership LabV	1	1	1

'NOTE:

1. *This is a typical flow. Certain degree programs may desire the Air Force Junior- and Senior-Level courses to be taken in any one combination listed below.*
   Years3andS, Years4and5, or as printed in years 3 and 4.
2. *While students are enrolled at RIT but not taking Air Force Junior- or Senior-Level courses, they msut be enrolled in a Leadership Lab.*
3. *Although the number of credit hours seem less than required, the contact hours actually meet or exceed those required by AFROTC/Hdqtrs.*

Scholarships

Air Force ROTC also offers a variety of scholarships to qualified students in many academic disciplines. Four-year, three and one-half year, three-year, two and one-half year, and two-year scholarships are available in technical, nontechnical, pilot, navigator and missile career fields. The needs of the Air Force dictate which scholarships will be offered on a yearly basis. Competition is very keen. Applications for a four-year scholarship for a high school student must be completed very early in the senior year of high school. Any student awarded a scholarship is entitled to numerous benefits. The majority of scholarships pay college tuition and most textbooks, laboratory and incidental fees, plus a $100 a month nontaxable allowance, during the school year.

Air Force ROTC specialized programs

The Air Force ROTC program also has several specialized career programs, pre-health being the most widely known. In addition a number of graduate study programs are available. Certain specialties may be paid in full; the requirements are extremely varied and contact with the Air Force ROTC detachment at RIT is imperative.

Financial assistance

Every scholarship cadet and all POC cadets receive a $100 monthly allowance. All scholarship cadets also receive free room while attending RIT. In addition, during field training, transportation is paid, room and board provided and salary of $16 per day is provided. Other student loan programs are available to cadets from both the Air Force and RIT.

Commissioning

The commissioning of cadets as second lieutenants takes place close to graduation day ceremonies. Prior to commissioning, each cadet must perform the following:

1. Complete all degree requirements
2. Complete the aerospace studies curriculum
3. Complete the applicable summer field training
4. Complete one quarter of English composition (scholarship recipients only)
5. Complete one quarter of college mathematics
6. Complete one year of a foreign language (scholarship recipients only)

Course descriptions

For a complete outline of courses offered at RIT, please request the Course Description Catalog from the Admissions Office, (716) 475-6631.

For more AFROTC information

Call:
Department of Aerospace Studies
Rochester Institute of Technology
(716) 475-5196
Or Visit:
Department of Aerospace Studies
Rochester Institute of Technology
George Eastman Memorial Building
3rd Floor, Room 3211
Rochester, N.Y. 14623-0887

College of Business

Walter F. McCanna, Dean

The College of Business offers programs in accounting, finance, information systems, international business, marketing, management, manufacturing and materials management, retail management, and photographic marketing management. Within these majors, several options for further specialization are possible.

The environment which graduates of the College of Business will enter is both complex and rapidly changing. A well-educated and prepared manager must have a broad foundation of knowledge not only in business but also in the social sciences, humanities and sciences in order to understand and act intelligently in this business environment. In addition, specialization is necessary if one hopes to make immediate contributions to an organization following graduation.

Plan of education
To achieve the educational aims described above, the College of Business has prepared a program which has four components: the liberal arts, the business core, the major and the cooperative work experience.

The liberal arts component of the business student's program is found in 14 courses (nearly one third of the total program) in the humanities, social sciences and sciences. Within this component, the student is expected to display proficiency in both oral and written forms of communication, and choose a humanities or social science concentration. The capstone course of the liberal arts program is a senior seminar in which a subject is explored in depth.

The business core component, described later in the bulletin, is comprised of a variety of courses in economics, business, mathematics, statistics and computer science. These courses, required of every student regardless of major, provide the fundamental knowledge and analytical skills necessary for successful performance in the pursuit of advanced study in a major. They also provide the background and perspective for consideration of career alternatives.

The third component, the major, provides an opportunity for the student to concentrate study in a specific career field in business. Majors offered by the college are as follows:

Accounting
Public Accounting Option
General Accounting Option

Finance

Information Systems*

International Business Dual Major*

Management
General Management Option
Entrepreneurship Option

Manufacturing and Materials Management

Marketing

Photographic Marketing Management*

Retail Management*
RIT/FIT Joint Degree Option

**Majors offered daytime only*

By building on the liberal arts and business core components, the major will provide mastery of marketable skills which are conceptually grounded in the knowledge of larger organizational and societal issues and perspectives.

The fined component, cooperative work experience, gives the student a chance to apply and question what has been learned in the classroom. These hands-on, paid work opportunities are planned for the student's last two years so that he or she will have sufficient educational background to contribute to the workplace.

The rigorous, challenging program described above is designed to provide a unique level of competence as well as to lay the foundation for continuous intellectual and career growth.

Cooperative education
Cooperative employment is an integral part of the program in the College of Business. Students obtain practical work experience in an area related to their chosen field of interest. This work experience is part of the student's career exploration and provides not only practical experience which can be related to course work, but also an opportunity to observe and perform work directly related to the student's major. This experience should help the student develop a greater insight into his or her chosen field and provide a record of practical experience which may increase the student's opportunities for placement and more rapid career advancement upon graduation.

All College of Business students are required to complete two successful cooperative work experiences. These "work blocks" take place following the completion of the sophomore year. While RIT and the College of Business cannot guarantee anyone cooperative employment, RIT's Office of Cooperative Education and Placement is available to assist students in their job search efforts.

Advising
The College of Business is committed to providing advising services throughout a student's academic program. In its 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 such as career and personal counseling. Students are assigned individual faculty advisors in their area of specialization. This assignment is made at the appropriate time in their academic program.

Transfer programs
The College of Business has, for many years, integrated transfer students into its baccalaureate degree programs. Typically, students who have earned an associate degree in a business program prior to enrollment at RIT may normally expect to complete the requirements for the BS degree in two years, which includes six academic quarters and two required quarters of cooperative employment experience.

In every instance, it is the policy of the college to recognize as fully as possible the past academic accomplishments of each student.

Part-time studies
Evening classes are offered by the College of Business for students who wish to pursue a baccalaureate degree in the areas of accounting, marketing, finance, management, and manufacturing and materials management. These upper-level programs are designed for students who have earned an associate degree. RIT's College of Continuing Education offers lower-division business courses for those students who are just beginning their college studies and who are interested in pursuing an associate degree. Upon successful completion of the associate degree, students may transfer to the College of Business.

Students who wish to pursue part-time studies during the day have the option of selecting one of the following baccalaureate degree programs: accounting, finance, information systems, international business, marketing, management, manufacturing and materials management, retail management, and photographic marketing management.,

Graduation requirements
The minimum academic requirements in the College of Business for the bachelor of science degree are: 1) minimum of 180 quarter credit hours, 2) earned minimum grade point average of 2.0 in the departmentally approved program, and 3) completion of required number of supervised cooperative education blocks for the program.

Resources
The College of Business is housed in the Max Lowenthal Memorial Building. In addition to modern classrooms, facilities include time-sharing terminals on line with RIT's extensive computer system and excellent software support. The college also has two labs with IBM personal computers available for student use.

Business students especially benefit from RIT's library facility with its extensive collection of business texts, periodicals and references. One of the most advanced libraries in the country, Wallace Memorial Library is a multimedia resource center featuring a computerized on-line catalog with remote terminal access.

Accreditation
RIT is accredited by the nationally recognized Middle States Association of Colleges and Schools. Additionally, the College of Business is accredited by the American Assembly of Collegiate Schools of Business (AACSB), a professional accreditation held by approximately 265 of the 1,200 undergraduate business programs in the United States.

Professional affiliations
The public accounting curriculum of the College of Business is registered with the New York State Education Department, and graduates meet the educational requirements for candidacy for the Certified Public Accountant (CPA) examination.

The college's Center for Production and Inventory Management is affiliated with the American Production and Inventory Control Society (APICS) and operates an international information service for APICS.

Memberships in professional organizations contribute to the quality of the programs in the College of Business.

Graduate programs
The College of Business offers a master's degree program in business administration on a part-time and full-time basis.

The program is professional in nature and prepares the student in all aspects of business management as well as offering a concentration in a field of specialization. Specific details are contained in the Graduate Bulletin, available from the Admissions Office.

Course descriptions
For a complete outline of courses offered at RIT, please request the Course Description Catalog from the Admissions office.

Admission at a Glance: College of Business Programs

General information on RIT's admission requirements, procedures and services is included in detail on pages 153-154 of this bulletin.

The College of Business offers several programs of study, referred to as majors, and often provides options within. This allows a student to focus on a specific area of interest. A more detailed description of each major is provided in subsequent pages.

Accounting—The accounting option provides career opportunities in public accounting as well as in accounting departments in corporate organizations. Students majoring in accounting may choose the public accounting option or the general accounting option. Graduates of the public accounting option meet the educational requirements for the CPA examination in New York State. Students interested in the certification in management accounting (CMA) are encouraged to follow the general accounting option.

Finance—Students majoring in finance may choose careers in financial management or security analysis. The finance major will prepare students for entry-level financial management positions in business organizations and entry-level management positions in financial institutions.

Management—Students majoring in management may choose either the general management or entrepreneurship option. Both areas have been developed to prepare students for positions in the field of management consistent with their personal characteristics and career goals.

Marketing—The marketing major is designed to enable students to develop a career foundation based on high degrees of personal and marketing management competencies. Since a great variety of employment opportunities in consumer and industrial organizations exist, the program is reasonably flexible.

Information Systems—This program prepares students for career opportunities in the area of computer information systems. Centered in the College of Business, this program responds to industry's demand for individuals well-versed both in computer technology and major business functions. RIT provides the education needed for a unique career, which spans applications programming, systems analysis and design, and the management of corporate information systems.

International Business—This dual major offers a second field of study in marketing, management and finance. The program is designed as an added opportunity for students who may want to enhance their basic professional career preparation in marketing, management or finance with international business competency. The education acquired through this dual major, coupled with the growing interest of American business in global markets, will provide students with a number of career options.

Manufacturing and Materials Management—This specialized program prepares students for entry-level positions in manufacturing management and materials management. Because its curriculum is based on the needs of professionals in the fields of production and inventory management, purchasing management and quality assurance, highly motivated students may elect to pursue professional certification by organizations such as APICS, NAPM, or ASQC.

Retail Management—The retail management major is an industry-oriented field of study. It is designed to focus the managerial skills acquired in the College of Business core curriculum on specific managerial issues and problems facing the contemporary retail industry. Students interested in a managerial career in fashion and its many allied industries should consider the Rochester Institute of Technology/ Fashion Institute of Technology Joint Degree Program.

Photographic Marketing Management—This program is designed to provide students with a thorough knowledge of the photographic process and a solid background in business administration. A combination of work in these two disciplines prepares the student for a management-level career in the photographic business.

Freshman admission requirements
Required high school subjects for all programs in the College of Business are:

- Elementary Algebra
- Intermediate Algebra
- 1 year any science
- 4 years of English (except where state requirements differ)

Desirable elective subjects:

- Additional mathematics and science

Transfer admission requirements
Every effort is made to recognize the past academic work of each transfer student. The College of Business has agreements with several two-year schools designed to facilitate the transfer process and, in most cases, assure junior status for transfer students.

The College of Business Core Curriculum

All students in the College of Business are required to take the business core courses described below (and later displayed in the sample four-year programs). These courses provide the skills specific to functional competencies in accounting, finance, marketing, and production management, and serve as a foundation for advanced study in a specific area of interest.

Business core courses
Career Seminar
Algebra for Management Science
Calculus for Management Science
Survey of Computer Science
Economics I (Macro)
Economics II (Micro)
Financial Accounting
Managerial Accounting
Legal Environment of Business
Introduction to Data Analysis
Management Science
Organizational Behavior
Corporate Finance
Information Systems
Principles of Marketing
Operations Management
Business Environment
Policy and Strategy

Additional requirements
- 2 contemporary science courses
- 7 lower-division liberal arts courses
- 3 upper-division liberal arts electives
- 3 upper-division liberal arts concentration courses

Senior Seminar
- 6 quarters physical education
- 2 quarters cooperative education

Department of Accounting

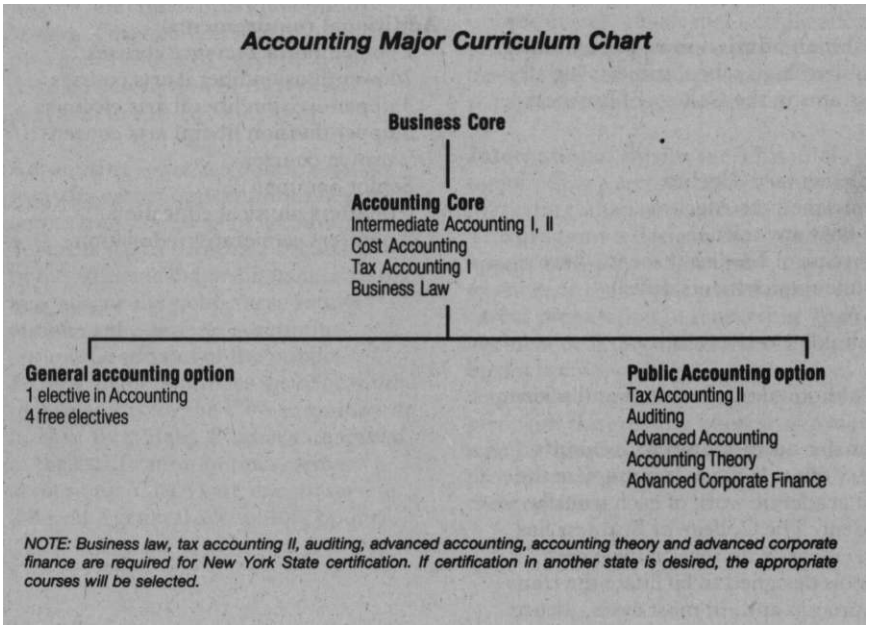
The accounting major provides fundamental theory and practice in the required accounting core. Beyond this core, students choose an option which best fits their career interests.

Students wishing to become certified public accountants must choose the public accounting option and complete each course prescribed in this program. This program is registered by the New York State Board for Public Accountancy, which means that the prescribed course work satisfies the state's CPA examination educational requirements. Candidates must have earned at least a "C" grade point average in their accounting courses to be admitted to the CPA exam.

The general accounting option allows more flexibility in choice of courses. This flexibility has been designed to permit students to tailor their programs to meet the diversity of industrial, commercial and municipal opportunities for accounting graduates. Of particular interest to both students and employers in the current environment is the opportunity to take advanced courses in computer and information sciences. Students should consult with an advisor before choosing electives in this option.

Yr.	ACCOUNTING - TYPICAL SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR
1	0106-330 Introduction to Data Analysis			4	
	0511 -301,302 Principles of Economics I & II.	4	4		
	0602-200 Survey of Computer Science		4		
	1016-225,226 Alg. for Mgmt. Sci; Calc. for Mgmt.Sci. . .	4	4		
	'Liberal Arts (lower division core)	4	4	8	
	Contemporary Science Electives	4		4	
	tPhysical Education	0	0	0	
2	0101-301,302 Financial and Managerial Accounting . . .	4	4		
	0102-312 Career Seminar	2			
	0101 -319 Legal Environment of Business	4			
	0101-320 Business Law		4		
	0102-430 Organizational Behavior			4	
	0105-463 Principles of Marketing			4	
	0106-334 Management Science	4			
	'Liberal Arts (lower division core)	4	4	4	
	'Liberal Arts (upper div. concentration or elect.)		4	4	
	tPhysical Education	0	0	0	
3	0101 -408,409 Intermediate Accounting I & II		4	4	
	0101 -431 Cost Accounting	4			
	0101-522 Tax Accounting I	4			
	0104-441 Corporate Finance	4			C
	0106-401 Operations Management		4		0
	Accounting Elective	4			0
	Free Electives		4	8	P"
	'Liberal Arts (upper div. concentration or elect,)		4	4	
4	0102-507 Business Environment	4			
	0102-551 Policy and Strategy		C	4	
	0106-505 Information Systems	4	O		
	Free Electives	8	0	4	
	'Liberal Arts (upper div. concentration or elect.)		p..	8	
	'Liberal Arts (Senior Seminar)			2	

'Seepage 118 lor Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
"NOTE: Students are expected to complete co-op requirement during the junior and senior years in accordance with specific requirements for their major. General co-op guidelines for the College of Business are discussed on pages 8 and 9.



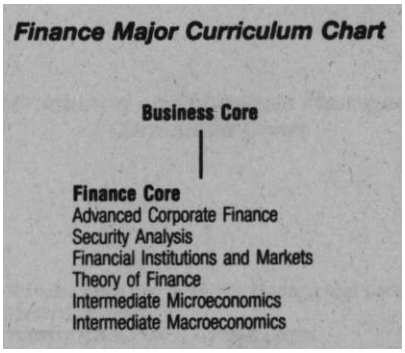
Department of Finance

The finance major will prepare students for financial 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 must operate.

Finance major graduates would pursue management positions in commercial, industrial, or governmental organizations. The finance student interested in security analysis usually will find positions in asset and securities management with financial institutions such as banks, brokerage houses, insurance companies, or real estate firms.

Yr.	FINANCE-TYPICAL SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR
1	0106-330 Introduction to Data Analysis			4	
	0511 -301,302 Principles of Economics I & II.	4	4		
	0602-200 Survey of Computer Science		4		
	1016-225,226 Alg. for Mgmt. Sci; Calc. for Mgmt. Sci. . .	4	4		
	Contemporary Science	4		4	
	'Liberal Arts (lower division core)	4	4	8	
	JPhysical Education.	0	0	0	
2	0101-301,302 Financial and Managerial Accounting . . .	4	4		
	0102-312 Career Seminar	2			
	0101 -319 Legal Environment of Business		4		
	0102-430 Organizational Behavior			4	
	0105-463 Principles of Marketing			4	
	0106-334 Management Science	4			
	'Liberal Arts (lower division core)	8	4		
	'Liberal Arts (upper div. concentration & elect.)			8	
	Free Elective		4		
	tPhysical Education	0	0	0	
3	0103-405 Intermediate Microeconomics	4			
	0103-406 Intermediate Macroeconomics..		4		
	0104-441 Corporate Finance	4			C
	0104-445 Advanced Corporate Finance		4		O
	0104-507 Security Analysis		4		O
	0104-525 Theory of Finance			4	P~
	0106-401 Operations Management	4			
	'Liberal Arts (upper div. concentration or elect.)			4	
		4	4	8	
4	0102-507 Business Environment	4			
	0102-551 Policy and Strategy		C	4	
	0104-510 Financial Institutions and Markets		O	4	
	0106-505 Information Systems	4	O		
	'Liberal Arts (upper div. concentration or elect.)	4	P..	8	
	'Liberal Arts (Senior Seminar)	2			
	Free Elective	4			

'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
"NOTE: Students are expected to complete co-op *requirement during the junior and senior years in accordance with specific requirements for their major. General co-op guidelines for the College of Business are discussed on pages 8 and 9.*



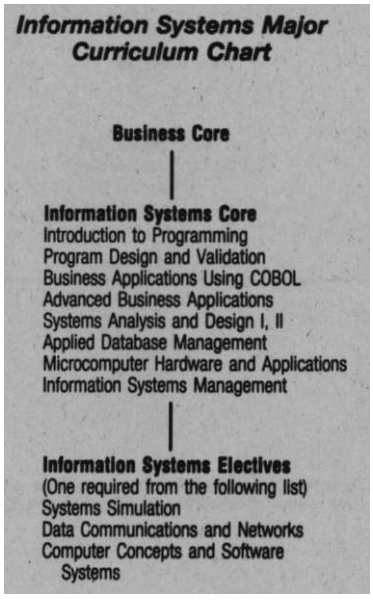
Department of Decision Sciences

Information systems major

The information systems major will prepare students for careers involving the development and management of information systems. The curriculum provides students with a thorough understanding of data processing fundamentals, including the ability to write properly documented programs. Students are introduced to the tools available for the analysis, design and implementation of computer-based and manual information systems. As a result, they are able to design practical, cost-effective information systems that will satisfy an organization's needs. Major career focuses for graduates of this program include applications programming, systems analysis, and information systems management.

Yr.	INFORMATION SYSTEMS -TYPICAL SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR
1	0602-200 Survey of Computer Science	4			
	0602-208 Introduction to Programming		4		
	0602-210 Program Design and Validation			4	
	0511 -301,302 Principles of Economics I &II		4	4	
	1016-225,226 Alg. for Mgmt. Sci.; Calc. for Mgmt. Sci	4	4		
	Contemporary Science	4		4	
	"Liberal Arts (lower division)	4	4	4	
	tPhysical Education	0	0	0	
2	0602-300 Business Applications Using Cobol	4			
	0602-303 Advanced Business Applications		4		
	0106-363 Systems Analysis & Design I			4	
	0101 -301,302 Financial & Managerial Accounting	4	4		
	0102-312 Career Seminar			2	
	0101-319 Legal Environment of Business			4	
	0106-334 Management Science		4		
	0106-330 Introduction to Data Analysis	4			
	"Liberal Arts (lower division core)	4	4	8	
	tPhysical Education	0	0	0	
3	0602-483 Applied Database Management	4			
	0106-464 Systems Analysis & Design II	4			
	0102-430 Organizational Behavior			4	C
	0104-441 Corporate Finance		4		O
	0105-463 Principles of Marketing			4	O
	0106-401 Operations Management	4			P"
	"Liberal Arts (upper div. concentration or elect.)	4	8	4	
	Free Electives_		4	4	
4	0106-540 Microcomputer Hardware & Applications		4		
	0106-553 Information Systems Management			4	
	Information Systems Elective	C	4		
	0102-507 Business Environment	O		4	
	0102-551 Policy and Strategy	O	4		
	"Liberal Arts (upper div. concentration or elect.)	p..	4	4	
	"Liberal Arts (Senior Seminar)				
	Free Elective			4	

"Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
"NOTE: Students are expected to complete co-op requirements during the lunior and senior years in accordance with specific requirements for their major. General co-op guidelines tor the College of Business are discussed on pages 8 and 9.



Manufacturing and Materials Management

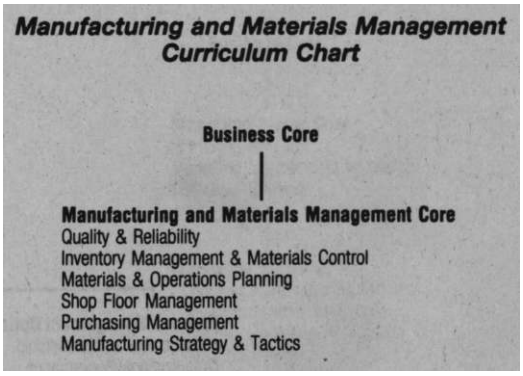
The manufacturing and materials management program is designed to give students an integrated view of the skills needed to manage manufacturing and materials in today's competitive, high-technology environment. Graduates of this program will understand how materials and manufacturing expertise contributes to the strategic well-being of a firm. They will understand and be able to use the basic techniques and systems for materials and operations planning and control, purchasing management, quality assurance (including statistical process control) and quality and productivity improvement. Highly motivated students may elect to pursue professional certification by APICS, NAPM or ASQC.

Center for Production and Inventory Management

The Center for Production and Inventory Management (CPIM) is devoted to applied research, instruction and professional service in support of students and practitioners. The center operates an international information service for APICS, authors a monthly professional help column, called "Dear APICS," which appears nationwide in *P&IM Review* **magazine, and prepares the annual** *APICS Bibliography.* **The CPIM is a center of activity for faculty, students and practitioners seeking to learn more about the profession of production and inventory management and about how to solve day-to-day problems.**

Yr.	MANUFACTURING & MATERIALS MANAGEMENT-TYPICAL SCHEDULE	Qtr. Credit Hours FALL	WTR.	SPG.	SMR
	V				
	0106-330 Introduction to Data Analysis			4	
	0511-301,302 Principles of Economics I & II	4	4		
	0602-200 Survey of Computer Science		4		
1	1016-225,226 Alg. for Mgmt. Sci.; Calc. for Mgmt. Sci. . .	4	4		
	Contemporary Science	4		4	
	"Liberal Arts (lower division)	4	4	8	
	tPhysical Education	0	0	0	
	0101-301,302 Financial & Managerial Accounting	4	4		
	0102-312 Career Seminar		2		
	0101-319 Legal Environment of Business		4		
	0104-441 Corporate Finance			4	
	0105-463 Principles of Marketing			4	
2	0106-334 Management Science		4		
	0106-401 Operations Management			4	
	"Liberal Arts (upper div. concentration or elect.)	4		4	
	"Liberal Arts (lower division core)	8	4		
	Education	0	0	0	
	0106-406 Quality & Reliability	4			
	0106-412 Inventory Management & Materials Ctrl			4	
	0106-408 Materials & Operations Planning	4			C
	0106-409 Shop Floor Management		4		0
3	0106-415 Purchasing Management		4		0
	0106-444 Manufacturing Strategy & Tactics			4	p..
	"Liberal Arts (upper div. concentration or elect.)	4	4	4	
	Free Electives	4	4	4	
	0102-430 Organizational Behavior		4		
	0102-507 Business Environment	C	4		
	0102-551 Policy and Strategy	O		4	
4	0106-505 Information Systems	O		4	
	"Liberal Arts (upper div. concentration or elect.)	p..		4	
	"Liberal Arts (Senior Seminar)		2		
	Free Electives		8	4	

'See page 118 for Libera! Arts requirements.
tSee page 176 for policy on Physical Education.
"NOTE: Students are expected to complete co-op requirements during the junior and senior years in accordance with specific requirements for their major. General co-op guidelines for the College of Business are discussed on pages 8 and 9.



Department of Management

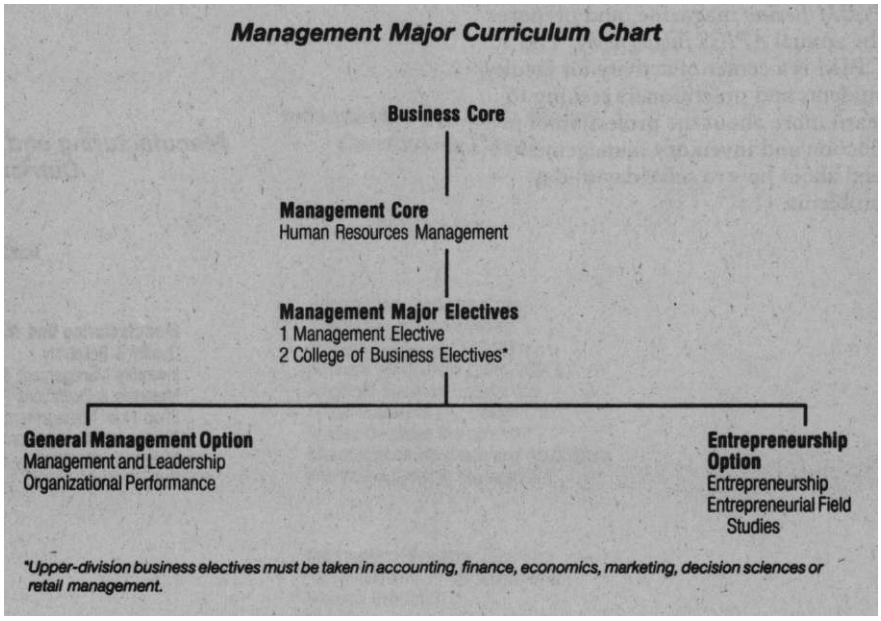
Management major

The management major is designed for students who wish to pursue management positions in a business organization. Careers may develop in areas as diverse as sales or production or various levels of management, including the potential to rise to the executive level.

The two options in this major are general management and entrepreneurship. The general management option is designed for students interested in working in medium- to large-sized organizations, while the entrepreneurship option specializes in entrepreneurial or stable small business organizations.

Yr.	MANAGEMENT MAJOR - TYPICAL SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR
1	0106-330 Introduction to Data Analysis			4	
	0511 -301,302 Principles of Economics I & II	4	4		
	0602-200 Survey of Computer Science		4		
	1016-225,226Alg.for Mgmt. Sci.; Calc. for Mgmt. Sci. . .	4	4		
	Contemporary Science	4		4	
	'Liberal Arts (lower division)	4	4	8	
	tPhysical Education	0	0	0	
2	0101 -319 Legal Environment of Business		4		
	0101-301,302 Financial & Managerial Accounting	4	4		
	0102-312 Career Seminar	2			
	0102-430 Organizational Behavior			4	
	0105-463 Principles of Marketing			4	
	0106-334 Management Science	4			
	'Liberal Arts (lower division core)	4	4	4	
	'Liberal Arts (upper div. concentration or elect.)	4		4	
	Free Elective		4		
	$Physical Education	0	0	0	
3	0102-455 Human Resources Management	4			
	0104-441 Corporate Finance	4			C
	0106-401 Operations Management	4			O
	Major Electives	4	8	8	0
	Free Electives		8	8	p..
4	0102-507 Business Environment			4	
	0102-551 Policy and Strategy		C	4	
	0106-505 Information Systems	4	O		
	'Liberal Arts (upper div. concentration or elect.)	8	O	8	
	'Liberal Arts (Senior Seminar)	2	p..		
	Free Elective	4			

"Seepage 118 for Liberal Arts requirements.
‡ See page 176 forpoiicy on Physical Education.
"NOTE: Students are expected to complete co-op requirements during the junior and senior years in accordance with specific requirements for their major. General co-op guidelines for the College of Business are discussed on pages 8 and 9.



Department of Marketing

Marketing major

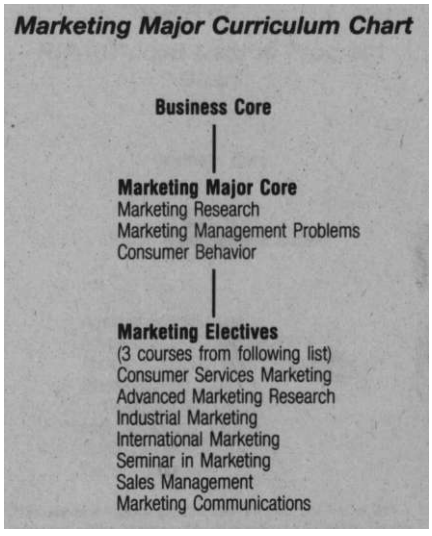
The marketing major prepares students for entry-level marketing management positions. As a marketing major, students acquire knowledge of markets, marketing and consumer behavior. Students acquire this knowledge through a combination of academic education and cooperative field education. This combination provides an understanding of problems related to a number of marketing areas: e.g., advertising, sales management, retailing, marketing research and product planning. *

For the student interested in a business career with an objective to explore, experience, and experiment, the marketing major is an ideal option. With a marketing background, the student will find a wide variety of employment opportunities which center on customer understanding and analysis, the major focus of any business. To develop this focus, the marketing curriculum provides an understanding of business, in general, and specific marketing operations with emphasis on customer motivation and business problem solving.

**Those interested in direct marketing may want to take the following additional courses offered by the College of Graphic Arts and Photography and the Marketing Group: Introduction to Printing, Typography I, Layout & Printing Designs, Copy Preparation, Materials & Process of Photography (10-week Summer Course), Retail Accounting & Merchandise Control*

Yr.	MARKETING MAJOR, TYPICAL SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR
1	0106-330 Introduction to Data Analysis			4	
	0602-200 Survey of Computer Science		4		
	1016-225,226 Alg. for Mgmt. Sci.; Calc. for Mgmt.Sci. . .	4	4		
	0511-301,302 Principles of Economics I & II	4	4		
	Contemporary Science.	4		4	
	'Liberal Arts (lower division core)	4	4	8	
	:£Physical Education	0	0	0	
2	0101-301,302 Financials Managerial Accounting	4	4		
	0102-312 Career Seminar	2			
	0101-319 Legal Environment of Business		4		
	0102-430 Organizational Behavior			4	
	0105-463 Principles of Marketing			4	
	0106-334 Management Science	4			
	"Liberal Arts (lower division core)	8	4		
	"Liberal Arts (upper div. concentration or elect.)			8	
	Free Elective		4		
	tPhysical Education	0	0	0	
3	0104-441 Corporate Finance	4			
	0105-505 Consumer Behavior	4			
	0105-551 Marketing Research		4		C
	0106-401 Operations Management			4	0
	Marketing Electives		4	4	0
	"Liberal Arts (upper div. concentration or elect.)	4	4	8	p..
	Free Electives	4	4		
4	0102-507 Business Environment	4			
	0102-551 Policy and Strategy			4	
	0105-550 Marketing Management Problems		C	4	
	0106-505 Information Systems	4	O		
	Marketing Elective	4	O		
	"Liberal Arts (Senior Seminar)	2	p..		
	Free Electives	4		8	

'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
"NOTE: Students are expected to complete co-op requirements during the junior and senior years in accordance with specific requirements for their major. General co-op guidelines for the College of Business are discussed on pages 8 and 9.

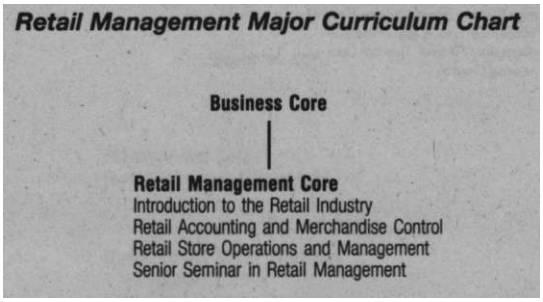


Retail management major

The retail management major is an industry-oriented field of study. It is designed to focus managerial skills acquired in the College of Business core curriculum on specific managerial issues and problems facing the contemporary retail industry. The retail management major employs all the functional areas of business, such as accounting, finance, personnel, marketing and information systems management, while placing them in a distinctive industry framework. Thus, the major—like the industry—is broad based, with the opportunity for students to design a unique curriculum to prepare for a managerial career in any functional area of the industry.

Yr.	RETAIL MANAGEMENT, TYPICAL SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR
1	1016-225,226 Algebra for Management Science; Calculus for Management Science	4	4		
	0511 -301,302 Principles of Economics I, II	4	4		
	0105-201 Introduction to the Retail Industry		4		
	0602-200 Survey of Computer Science			4	
	0101-319 Legal Environment of Business			4	
	"Liberal Arts (lower division core)	4	4	8	
	Contemporary Science	4			
	tPhysical Education	0	0	0	
2	0101 -301,302 Financial & Managerial Accounting	4	4		
	0102-312 Career Seminar		2		
	0102-430 Organizational Behavior			4	
	0106-330 Introduction to Data Analysis	4			
	0106-334 Management Science		4		
	0105-301 Retail Accounting and Merchandise Control . .			4	
	Contemporary Science	4			
	"Liberal Arts (lower division core)	4	8		
	"Liberal Arts (upper division concentration or elective) . . .			8	
	tPhysical Education	0	0	0	
3	0104-441 Corporate Finance		4		
	0105-463 Principles of Marketing	4			
	0106-401 Operations Management	4			
	0105-401 Retail Store Operations & Management			4	
	Free Electives	8	8	8	8
	"Liberal Arts (upper division concentration or elective) . . .		4	4	8
4	0102-507 Business Environment	C	C	4	
	0105-501 Senior Seminar in Retail Management	O	O	4	
	0106-505 Information Systems	O	0	4	
	0102-551 Policy and Strategy	p..	p..	4	
	"Liberal Arts (Senior Seminar)			2	

'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
"NOTE: Students are expected to complete co-op requirements during the junior and senior years in accordance with specific requirements for their major. General co-op guidelines for the College of Business are discussed on pages 8 and 9.



Rochester Institute of Technology-Fashion Institute of Technology Joint Degree Program

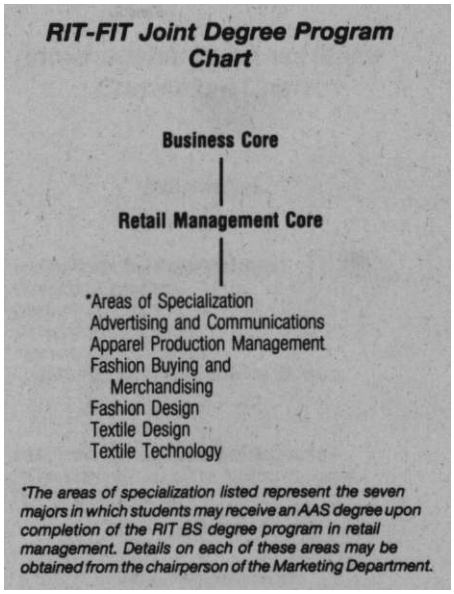
Students enrolled in the Retail Management major will have the option of selecting sub-specializations related to the fashion industry by attending the Fashion Institute of Technology (FIT) during their junior year. Located in New York City, FIT is a specialized college under the direction of the State University of New York. It is devoted exclusively to educating students for creative careers in fashion and its many allied industries.

Students selecting the FIT option will enroll in specific classes during the fall and spring semesters at FIT and will return to RIT for their senior year. Upon completion of all requirements for their bachelor of science degree from the College of Business, students also will be certified for their associate in applied science (AAS) degree from FIT in their area of specialization. Students must meet minimum grade point averages as designated by RIT and FIT

Students who select this joint degree program will be required to complete only one quarter of full-time, paid, cooperative work experience, although they may elect to complete additional work blocks.

Yr.	RETAIL MANAGEMENT FASHION INSTITUTE OF TECHNOLOGY OPTION SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR
1	1016-225 Algebra for Management Science	4			
	0511-301 Principles of Economics I	4			
	0105-201 Introduction to the Retail Industry		4		
	1016-226 Calculus for Management Science		4		
	0511 -302 Principles of Economics II		4		
	0602-200 Survey of Computer Science			4	
	0101-319 Legal Environment of Business			4	
	'Liberal Arts (lower division core)	4	4	8	
	Contemporary Science	4			
	tPhysical Education	0	0	0	
2	0101-301,302 Financial and Managerial Accounting . . .	4	4		
	0102-312 Career Seminar			2	
	0102-430 Organizational Behavior			4	
	0106-330 Introduction to Data Analysis	4			
	0106-334 Management Science		4		
	0105-301 Retail Accounting and Merchandising Control .			4	
	Contemporary Science		4		
	"Liberal Arts (lower division core)	8	4		
	"Liberal Arts (upper division concentration or elective) . . .			8	
	tPhysical Education	0	0	0	
3	0106-401 Operations Management	Fashion			4
	0105-463 Principles of Marketing	Institute of			4
	"Liberal Arts (upper division concentration or elective) . . .	Technology			8
	0104-441 Corporate Finance		4		
	0105-401 Retail Store Operations & Management		4		
	0102-507 Business Environment	C	4		
	0105-501 Senior Seminar in Retail Management	O	4		
	0106-505 Information Systems	0		4	
	0102-551 Policy and Strategy	p..		4	
	"Liberal Arts (upper division electives)			8	
	"Liberal Arts (Senior Seminar)		2		

'Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
"NOTE: Students are expected to complete co-op requirements during the junior and senior years in accordance with specific requirements for their major. General co-op guidelines for the College of Business are discussed on pages 8 and 9. Students who wish to work during the Christmas season may elect to Co-op during winter quarter.



Photographic marketing management major

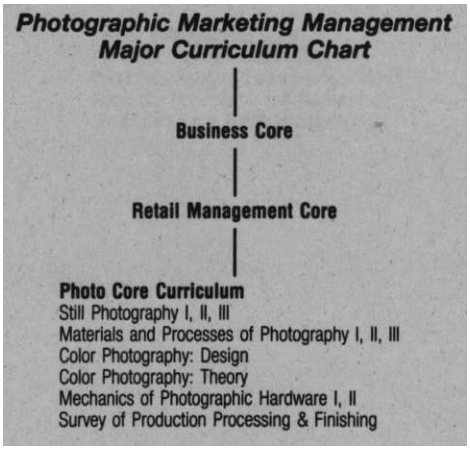
The photographic marketing management major is a joint degree program offered by the College of Business and the School of Photographic Arts and Sciences. This program is designed to provide students with a thorough knowledge of the photographic process and a solid background in business administration and retail management. The combination of course work in these two disciplines prepares students for management careers in the photographic industry. Opportunities for positions include those in customer service aspects of photofinishing and professional color laboratories, and management positions with the photographic manufacturers and photographic retailers.

Yr.	PHOTOGRAPHIC MARKETING MANAGEMENT, TYPICAL SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	1016-225 Algebra for Management Science	4			
	0511-301 Principles of Economics I	4			
	0105-201 Introduction to the Retail Industry		4		
	1016-226 Calculus for Management Science		4		
	0511 - 302 Principles of Economics II		4		
	0602-200 Survey of Computer Science			4	
	0101-301 Financial Accounting			4	
	'Liberal Arts (lower division core)	8	4	8	
	tPhysical Education	0	0	0	
2	0903-207,208,209 Still Photo I, II, III	3	3	3	
	0105-301 Retail Accounting and Merchandise Control . . .		4		
	0106-330 Data Analysis	4			
	0101-302 Managerial Accounting	4			C
	0106-334 Management Science		4		O
	0101-319 Legal Environment of Business	4			O
	0102-312 Career Seminar			2	P"
	'Liberal Arts (lower division core)		4	4	
	'Liberal Arts (upper division concentration)			8	
	tPhysical Education	0	0	0	
3	0903-211,212,213 Materials & Processes of Photography .	3	3	3	
	0104-441 Corporate Finance		4		
	0105-463 Principles of Marketing	4			C
	0105-401 Retail Store Operations & Management			4	O
	0106-401 Operations Management			4	O
	0102-430 Organizational Behavior			4	P"
	'Liberal Arts (upper division concentration or elective)	8	8		
4	0106-505 Information Systems		4		
	0102-507 Business Environment	4			
	0920-311 Color Photography Design	4			
	0105-501 Senior Seminar in Retail Management			4	
	0920-312 Color Printing Theory		4		
	0905-320 Mechanics of Photographic Hardware I	4			
	0102-551 Policy & Strategy			4	
	0905-321 Mechanics of Photographic Hardware II		4		
	0905-310 Survey of Production Processing & Finishing . . .		2		
	Free Electives			4	
	'Liberal Arts (Senior Seminar)			2	

"See page 118 for Liberal Arts requirements.

†See page 176 for policy on Physical Education.

"NOTE: Students are expected to complete co-op requirements during the junior and senior years in accordance with specific requirements for their major. General co-op guidelines for the College of Business are discussed on pages 8 and 9.



International business major

The international business major is offered by the College of Business in cooperation with the College of Liberal Arts. Designed to meet the growing interest of American business in global markets, the major in international business has an adjunct major in either finance, marketing, or management.

Students in international business develop the business and liberal arts foundations necessary to understand business, political and cultural diversity. Proficiency in a foreign language is an integral part of the program. The cooperative education feature for the international business student may be satisfied through foreign work experience, international experience within a domestic corporation, or study abroad. Designed for highly motivated students with strong academic credentials, the international business major has a total quarter credit hour requirement of 192.

Upon graduation, international business students are prepared to step into entry-level positions in several aspects of international trade. They can assume positions such as assistant international product managers, assistant export-import managers, international financial analysts, sales representatives or regional analysts.

Yr.	INTERNATIONAL BUSINESS DUAL MAJOR, TYPICAL SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR
1	0511 -301,302 Principles of Economics I and II	4	4		
	1016-225,226 Algebra for Management Science; Calculus for Management Science	4	4		
	Contemporary Science	4		4	
	0106-330 Data Analysis			4	
	0602-200 Survey of Computer Science		4		
	"Liberal Arts (lower division core)	4	4	8	
	JPhysical Education	0		0	
2	0101-301,302 Financial and Managerial Accounting . . .	4	4		
	0106-334 Management Science	4			
	0101 -319 Legal Environment of Business		4		
	Language I		4		
	0102-312 Career Seminar		2		
	0102-430 Organizational Behavior			4	
	0106-401 Operations Management			4	
	0104-441 Corporate Finance			4	
	0105-463 Principles of Marketing				4
	0511 -442 Contemporary International Economic Problems				4
	0502-521 Intercultural Communications				4
	0102-432 Comparative Management				4
	"Liberal Arts Concentration I			4	
	"Liberal Arts (lower division core)	8	4		
	tPhysical Education	0	0	0	
3	0104-504 International Finance, 0105-555 International Marketing	4 4		Domestic Co-op Overseas Experience	
	Overseas Experience-Language II, III, IV				
	Co-op and other studies		12*		
	"Liberal Arts Concentrations 1, II	8			
4	0520-501 Senior Seminar	2			
	0106-505 Information Systems	4			
	0102-507 Business Environment		4		
	Functional Area Electives	8	8	8	
	0102-551 Policy and Strategy			4	
	"Liberal Arts Electives	4	4	4	

This language requirement may be completed at RIT in successive previous quarters, or in conjunction with the overseas experience which may last from six to nine months.

'Seepage 118 for Liberal Arts requirements.

fSeepage 176 for policy on Physical Education.

College of Continuing Education

A traditional college education is not always the answer. For the adult student—juggling work, family and social obligations—alternative ways to reach educational goals are a necessity.

The courses and programs offered by the College of Continuing Education (CCE) are tailored to the adult student who has been working for several years and is reaching for the next rung on the career ladder, is contemplating a career switch, or is re-entering the work force after some years away. Students can earn certificates, diplomas, and degrees.

The courses and programs are offered during the day, at night, on Saturdays, through Weekend College, and even via TeleCourses that students can take at home.

The CCE **Academic Division** offers numerous options in areas such as management, photography, technologies, and machine tool, as well as fine and applied arts, technical communication, business administration, computer science and general education. CCE offers 19 certificate programs and diplomas, 23 associate degrees, and six bachelor of science degrees, as well as the new flexible Applied Arts and Science Degrees at the diploma, associate and baccalaureate levels.

The School of Applied Industrial Studies (SAIS) offers day and evening Machine Tool Technical Certificate programs, as well as an evening Computer-Aided Drafting Certificate program.

The **Center for Quality and Applied Statistics** (CQAS) offers a master of science degree in applied and mathematical statistics for part-time or full-time students. Summer study and co-op programs also are available. The center presents short courses and seminars through its "Quality and Productivity Series" for individuals, business and industry. Call 475-6129 for additional information.

The **Career and Human Resource Development Department** (CHRD) provides graduate study leading to a master of science degree in career planning and human resource development. The behavioral science-based program emphasizes the areas of organizational development, career development, human resource development and statistical analysis. The program is open to both full- and part-time students and prepares professionals for employment in education, business, industry, and social services agencies. Call 475-5069 for additional information.

RIT Training and Professional Development offers several hundred short courses, seminars and workshops each year, presented by RIT faculty, and nationally renowned speakers. These programs won't provide participants with credit, but will provide them with up-to-date knowledge and skills in a wide range of fields—business, communications, engineering, allied health, human resource development, small business skills—the list goes on.

RIT Training and Professional Development offers custom-tailored programs for business, industry and organizations. Staff experts will help with a firm's in-house training needs, analyze, and design training programs that meet those needs exactly. Call 475-6600 for additional information.

The CCE **Open Enrollment Policy** allows a student to take any course or pursue any degree for which he or she has sufficient background. Academic advisors are available throughout the year to answer questions regarding course or program choices.

To officially choose a program, students must matriculate—that is, complete an admissions application and be accepted. At the time of matriculation degree requirements are defined and documented, transfer credits are evaluated to meet degree requirements, and eligibility for applying for student loans and state and federal aid is established.

Specially trained financial aid counselors can provide students with information about some of the grants and loans available for part-time students. In addition to federal, state and private programs, RIT has special financial aid funds for part-time students that can cut tuition costs by as much as 50 percent. Many companies have employee education benefits that will pay for some or all tuition costs; active U.S. Army Reserve and National Guard members are eligible for benefits that pay up to 90 percent of tuition.

For students who want to try a new field, brush up on some old skills, or are looking for personal satisfaction rather than credit, RIT's new Audit Policy may be the answer. Students can audit many of the CCE credit courses on a non-credit basis, and the tuition is half price.

For more information on any of the programs offered by CCE, call 475-2234.

What about transfer credit from other schools?
Degree programs in CCE 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 may also be awarded for courses included in the New York State Education Department Publication, *Guide to Educational Programs in Non-Collegiate Organizations.* Call 475-2218 for more information.

Who teaches our courses?
Most courses in the College of Continuing Education are conducted by instructors who teach what they do professionally. Our faculty are selected for their professional competence, academic background and teaching ability. Our faculty teach because of their enthusiasm for their subject, their interest in seeing others develop personally and professionally, and their own need for a creative outlet.

When are courses taught?
In addition to our weekly evening and trick work schedules, we also offer courses on television and through audio conferences, and Weekend College.

Telecourses offer quality programming which students can take at home. Courses combine video-tape lectures aired on cable and public broadcast television with textbook readings, audio and computer conferencing, assignments, exams, and a limited number of class meetings. Students have access to instructors by mail, computer, telephone, or individual appointment. These electronic delivery systems allow students to learn at times and places convenient to them.

Weekend College courses meet on Saturdays, (leaving the rest of your weekend free) usually every other weekend, and a full course may be completed in four or five weekends. Weekend College students enjoy the schedule and the seminar-like environment. Through Weekend College, you can earn credits toward a degree or complete a certificate or diploma program.

Applied Arts and Science Degrees

Adult students returning to college on a part-time basis need high-quality degree programs in a variety of fields that are both flexible and recognize an adult's prior college level-learning. The College of Continuing Education now offers you the opportunity to tailor an individualized program of technical and professional study through its new Applied Arts and Science program. There are three levels:

Diploma
36 credits; 1 area of concentration

Associate of Applied Science (AAS) degree: 52 core credits plus 38 credits in 1-2 areas of concentration plus general education courses

Bachelor of Science (BS) degree: 90 core credits plus 90 credits in 2-4 areas of concentration plus general education courses

Individualized Concentrations

The associate and bachelor's degrees allow you to study several different professional and technical areas, selected specifically to meet your unique career and personal goals. The diploma focuses on one concentration. For your professional concentrations, you can draw on a wealth of educational resources from across RIT colleges and departments, including: engineering technologies, sciences, computing, photography and printing, business and management, liberal arts, physical and social sciences, mathematics, fine arts, and applied communication.

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 the individual student's career and professional development. For example, one individualized program might lead to a bachelor's degree with concentrations in computing, graphic arts, and management, while another could lead to a bachelor's degree that combines fields of communication and management.

And as your career plans evolve and the demands of your technical and professional fields change, you will meet regularly with your advisor to review and update your plan of study.

Course requirements, CIDA-AAS & CIDB-BS degrees

	Math/ Computer/Science	Qtr. Cr.	Liberal Arts	Qtr. Cr.	Concentration(s)* 1 or 2	Qtr. Cr.
I 52+	Tech Math CTAM-201,202 or College Math for Business CBCH-201,202 or Math Thought/ Process AND CTAM-205 Modern Math Methods CTAM-206 Intro to Computers/ Prog. CTDS-200 or Intro to Computer Science CTDS-202 or Data Processing CBCC-321 College Physics/ Lab CTCP-221, 222,223,206 207,208 or Contemporary Science (3 of 4 courses) CTCS-221,222, 223,224 or Engineering Chemistry/ Lab CTCC-241, 242,243,246 247,248	8 8 4 4 4 4 4 12 12 12	Communications + + CHGL-220 Literature CHGH-260 Communications Elective Humanities Electives Behavioral Science Electives	4 4 4 8 8	To be developed by student with advisor	38
* + m CIDB-BS	**Math/Science** Math OR Science Electives"*	8	**Liberal Arts** Humanities Elective" Liberal Arts Concentration**" Liberal Arts Electives**" Senior Seminar	4 12 16 2	**Concentration(s)* 2 or 3** To be developed by student with advisor	52

+ + These communications courses require pretest; call 475-2234 for information. Students completing BS or B. Tech degrees must also pass a communications competency test.
'Aconcentration - 20QH(ormore)inonesubiectarea(i.e.. Computers, Communications, Business).
"Must choose one course each from three different areas of Humanities (i.e., Fine Arts, History, Philosophy, or Science/Technology and Values).
"'Cannot be in the same area as professional concentration.
""Students choosing a Liberal Arts area for a professional concentration must choose their "Liberal Arts Concentration" and "Liberal Arts Electives" in othv disciplinary or interdisciplinary areas in the College of Liberal Arts.

Common Features

Every Applied Arts and Science degree has certain features in common:

1. An approved program of study developed with an individual advisor and advisory committee
2. General education courses in mathematics, computer science, science, and liberal arts (52 credits for the AAS; 90 credits for the BS)
3. One or more professional concentrations which provide each student with the opportunity to develop an interdisciplinary program tailored to specific career and personal objectives:

Recognition for Prior College-Level Learning

Your program will begin by taking account of what you already know and have accomplished. For example, college credits earned at RIT or other institutions will be reviewed to see how they might be applied to your Applied Arts and Science program of study; your professional certifications and experiences will be evaluated for the possibility of receiving credit in your new program; and you may earn credits (by examination, portfolio reviews, or other documentation) for college-level learning that you have gained on-the-job or through other educational experiences. For advising, contact Bette Anne Winston at 475-2218.

Business and The Arts

Nancy Kunkler, Academic Program Assistant

The Business and The Arts Division of CCE provides a wide variety of technical and professional programs of study at several distinct levels of achievement. In addition, many general education courses, which are a required part of every degree program in CCE, are offered by this division.

Each program of study is carefully designed to meet the interests of students and Rochester's expanding business, artistic and industrial complex. Advisory commitees composed of representatives from local business, industries and professional groups contribute to an ongoing assessment of courses and programs of study to assure high-quality education. Business and The Arts includes the following:

- **Individual courses and sequences of special interest**
- **Small Business Management Certificate**
- **Customer and Consumer Service Certificate**
- **Management Certificate**
- **Certificates in Basic and Advanced Technical Communication**
- **Business and Career Communication Certificate**
- **Certificates in Public Relations Communications—Programs in Professional Writing and Graphic Communication**
- **Management Diploma (7 options)**
- **AAS in accounting, business administration, marketing, personnel administration, production management, and traffic and transportation**
- **AA in general education (with career options)**
- **Deaf studies concentration**
- **Diplomas in fine and applied arts and crafts**
- **Diplomas in printing and photography**
- **AAS in professional photography**
- **AAS/BS in graphic arts (with 3 options)**
- **AAS/BS in photographic science**

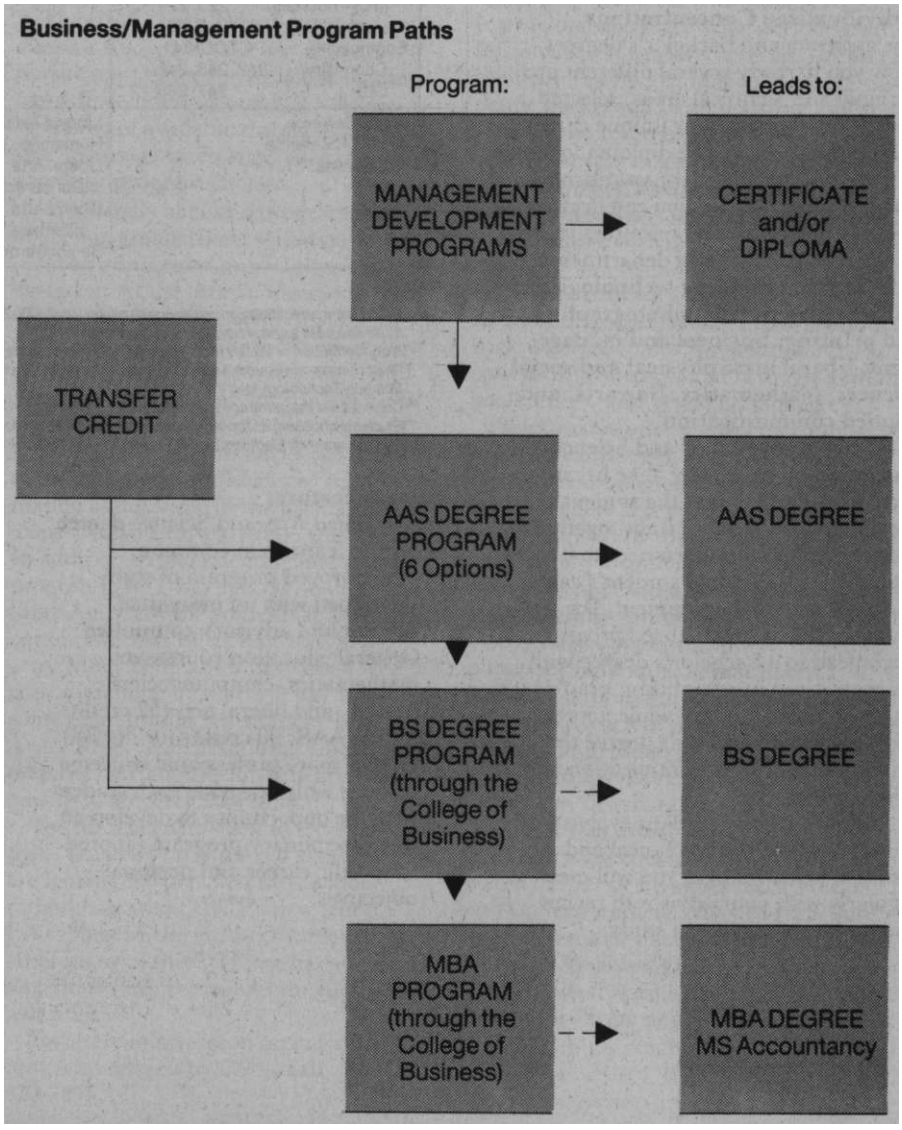
Business and Management Studies

Approximately 50 credit-bearing courses in business and management subjects are available through the College of Continuing Education.

Courses leading to an AAS degree and transferable to appropriate baccalaureate degree programs in RIT's College of Business and other schools are available in business administration, accounting, marketing, personnel administration, production management, and traffic and transportation. For those interested in a short-term concentration in one of these fields, CCE also offers a Management Development Program leading to a Management Certificate and Management Diploma, a Small Business Management program, and a program in Customer and Consumer Service. Courses also may be taken individually.

General requirements for an AAS degree, diploma, or certificate in business or management are:

- **Completing the necessary quarter credits**
- **Following the program outline when selecting courses**
- **Achieving a program GPA of at least 2.0 in order to be certified**



Small Business Management Development Program

The certificate of achievement 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, key members of families owning 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 include academically qualified entrepreneurs who have managed their own shall companies. Courses may count as business electives in degree programs, may serve as foundation courses to the Management Diploma, and do not have to be taken in sequence. Typically, the program is offered as part of Weekend College and our regular schedule.

Like most courses in CCE, Small Business Management courses may be taken on an audit basis (non-credit, without exams), at a reduced rate.

Small Business Management Certificate Program

New Venture	Credit Hours
Development-CBCE-221	4
Small Business Management & Finance-CBCE-222	4
Small Business Marketing & Planning-CBCE-223	4
Total	12

Customer and Consumer Service

Increasingly, in today's competitive and growing service economy, the key to success is customer satisfaction. Customer satisfaction comes from delivering quality products and services that are strongly shaped by thorough and comprehensive attention to customer needs.

The unique certificate of achievement program focuses on customer satisfaction as the sustainable competitive advantage for both manufacturing and service industries (e.g., health care, communications, banking and finance, transportation, retailing). Special attention is paid to developing an orientation toward customer satisfaction throughout organizations, and to the relationship between customer satisfaction and customer service.

This program is designed for:

- managers and potential managers who want to implement customer satisfaction principles and practices throughout their organizations
- current and future managers, supervisors, and personnel in sales, customer service, consumer service, customer relations, quality management, and human resource management.

The program consists of 16 credits—10 in required core courses and an additional 6 selected from an array of specialized electives. The Certificate may be completed in one year of study. Individual courses and/or the Certificate may be applied to appropriate undergraduate degree programs. The program may also be acquired as a post-baccalaureate credential. For more details, call 475-4999.

Customer and Consumer Service Certificate Program

Required core courses	Credit Hours
The New Service Economy-CHGS-227	2
Customer Relations Systems-CBCE-305	4
Customer Service Technology-CBCE-306	4
Core Total	10

Electives (choose any 6 credits):

Marketing Practices for the Service Economy-CBCG-362	2
Recruiting, Training & Supervising Service Industry Personnel-CBCI-225	2
Interpersonal Communication for Customer Service-CHGL-340	4
Special Topics Courses	2-4
Electives Total	6
Certificate Program Total	16

Real Estate and Insurance

Two courses in reetl estate and two courses in principles of insurance are approved by the New York State Division of Licenses as preparation for the sales person and broker's license examinations in real estate and insurance. These courses provide an excellent foundation for a career in these fields:

CBCM-201	Basic Real Estate Principles
CBCM-202	Advanced Real Estate Principles
CBCN-271	Principles of Insurance I
CBCN-272	Principles of Insurance II

The Management Development Program

The Management Development Program has two components: The Management Certificate and The Management Diploma. By successfully completing the Management Process (CBCE-200, 201, 202), a 12-credit course in practical supervision, management, and communication skills, students may earn the Management Certificate. To receive a Management Diploma, students must complete 16 additional credits in one of seven business/management concentrations.

The program is structured to provide a broad foundation in applied general management, and focused study in a specialized field. It is specifically designed for new supervisors, emerging managers, and those seeking supervisory and management positions; and for new and re-entering students. Both parts of the program are also appropriate for individuals with degrees in the liberal arts, sciences, or technologies, who wish to acquire new professional skills and expand their career opportunities.

Students may take one or both parts of the program; and both may be completed in one academic year. Credits earned in The Management Development Program can be applied to various degree programs. Management Certificate and Diploma courses are typically offered as part of our Weekend College and our regular schedule. For further information, call 475-4999.

Management Certificate

The first component of The Management Development Program is The Management Certificate.

The Management Certificate is earned by successfully completing CCE's unique three-quarter, 12-credit course, The Management Process (CBCE-200, 201, 202).

The Management Process focuses on:

- Practical applications of management theory
- Management problems, solutions and ideas
- Personal development as an effective manager

The Management Process 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-plays, simulations, and other instructional methods, students learn effective supervisory and management practices. Instruction is usually guided by a team of management specialists, rather than by a single instructor.

Credits earned in the Management Certificate program may also be applied toward appropriate degree programs.

Management Certificate Program

	Credit Hours
Management Process I-CBCE-200	4
Management Process II-CBCE-201	4
Management Process III-CBCE-202	4
Total	12

Management Diploma

The second component of The Management Development Program is The Management Diploma.

In the Management Diploma program, students concentrate their studies in one of seven specific areas of business and management (such as accounting or marketing) that may be immediately relevant on the job.

A Management Diploma is earned by completing 16 quarter credits in addition to, typically, a Management Certificate. However, three foundation courses (Organization and Management, CBCE-203; Communications, CHGL-204 or 205 or 220; and one additional business elective) *or* the Small Business Management certificate (New Ventures Development, CBCE-221; Small Business Management and Finance, CBCE-222; and Small Business Marketing and Planning, CBCE-223) *or* the equivalent, may be substituted for the Management Certificate.

Courses applied toward a Management Diploma may also be counted as professional courses in appropriate degree programs.

Management Diploma Programs

Accounting	Credit Hours
Mgt. Process (CBCE-200, 201, 202) or approved alternative	12
Financial Accounting-CBCA-201	4
Managerial Accounting-CBCA-203	4
Intermediate Accounting I-CBCA-308	4
Intermediate Accounting II-CBCA-309	4
Total	28

General Management	Credit Hours
Mgt. Process (CBCE-200, 201, 202) or approved alternative	12
Financial Accounting-CBCA-201	4
Managerial Accounting-CBCA-203	4
Data Processing Principles-CBCC-312	4
Marketing-CBCG-361 or 1-Business Elective	4
Total	28

Marketing	Credit Hours
Mgt. Process (CBCE-200, 201, 202) or approved alternative	12
Marketing-CBCG-361	4
Effective Selling-CBCG-210	4
Advertising Principles-CBCG-213	4
1-Business Elective	4
Total	28

Personnel Administration	Credit Hours
Mgt. Process (CBCE-200, 201, 202) or approved alternative	12
Personnel Administration-CBCI-229	4
Interviewing Techniques-CBCI-224	4
Business Law I-CBCB-301	4
1-Business Elective	4
Total	28

Industrial Management	Credit Hours
Mgt. Process (CBCE-200, 201, 202) or approved alternative	12
Production Management-CBCJ-209	4
Fundamentals of Industrial Engineering-CBCJ-305	4
Industrial Engineering Economy-CBCJ-306	4
Data Processing Principles-CBCC-321	4
Total	28

Traffic Logistics & Purchasing	Credit Hours
Mgt. Process (CBCE-200, 201, 202) or approved alternative	12
Introduction to Logistics & Transportation-CBCL-234	4
Traffic & Transportation Law, Rates, Accounting & Control-CBCL-239	4
International 1-Transportation & Logistics Elective-CBCL-241	4
Marketing-CBCG-361	4
Total	28

Real Estate Management	Credit Hours
Mgt. Process (CBCE-200, 201, 202) or approved alternative	12
Basic Real Estate Principles-CBCM-201	4
Advanced Real Estate Principles-CBCM-202	4
Real Estate Investment & Finance-CBCM-203	4
Real Estate Evaluation-CBCM-204 or 1-Business Elective	4
Total	28

Business and Management AAS Degree Programs

Programs leading to an AAS degree in business administration are available in:

- accounting
- business administration

Programs are fully transferable to baccalaureate degree programs in RIT's College of Business.

AAS degree programs in management are offered in:

- marketing
- personnel administration
- production management
- traffic & transportation

Management programs are designed to give specialized skills in these areas, with course work being transferable to a BS degree program in RIT's College of Business.

All business and management degree programs include a core group of business courses in organization and management, accounting, data processing and business law. Approximately half of the credits in degree programs are earned through these professional courses, which may count in Management Diploma programs, as well as in AAS degrees. In addition, all business and management degree programs include a broad spectrum of courses in communication, behavioral/social sciences, humanities, math and science.

Core Requirements, All Business and Management AAS Programs

Below are the core requirements for all business and management degree programs to which professional program requirements are added.

	PROFESSIONAL COURSES	Qtr. Cr.	GENERAL EDUCATION	Qtr. Cr.	MATH, STATISTICS & SCIENCE	Qtr. Cr.
Required Courses 92 Credits	Financial Accounting .. CBCA-201 Managerial Accounting . CBCA-203 Organization &Mgmt(1) . CBCE-203 Data Proc. Principles .. CBCC-321 Principles of Marketing . CBCG-361 Management Science ... CBCE-353 Professional Concentration Courses (see below)	4 4 4 4 4 4 20	Communications*. . . . .CHGL-220 Literature.?™. . . . . .CHGH-260 or Dyn. Comm. I*. . . . . .CHGL-204 Dyn. Comm II. . . . . .CHGL-205 Economics. . . . . .CHGS-221,222 Psychology. . . . . .CHGS-211 Sociology. CHGS-231	8 or 8 8 4 4	Science Electives" Math for Business . CBCH-201,202 Statistics. CBCH-351,352	8 8 8
	Total	44	Total	24	Total	24

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

(1) The Management Process (CBCE-200,201,202) may be substituted for the following:

	Qtr. Cr.
Dynamic Communications I (CHGL-204).	*4*
Organization £ Management (CBCE-203).	*4*
1-Business elective	*4*

' These communications courses require pretest; call 475-2234 for information.
Students who take CHGL-204 should also take CHGL-205. Students who take CHGL-220 should also take CHGH-260.

Science electives may include any of the following:
Comtemporary Science/Biology CTCS-221
Contemporary Science/Chemistry CTCS-222
Contemporary Science/Physics CTCS-223
Contemporary Science/Oceanus CTCS-224
Engineering Chemistry CTCC-241,242,243 or
College Physics CTCP-201,202,203

Professional Concentration Requirements, Business and Management AAS Programs

In addition to the core requirements, students must also complete *one* of the following professional concentrations.

Accounting (CBCA)

		Cr. Hrs.
Intermediate Accounting I.	.CBCA-308	4
Intermediate Accounting II.	.CBCA-309	4
Business Law I	CBCB-301	4
Business Law II.	.CBCB-302	4
History or Fine Arts Elective		4
		20

Business Administration (CBCE)

		Cr. Hrs.
History or Fine Arts Elective.		4
Legal Environment of Business.	.CBCB-310	4
3-Business Electivest		12
		20

Marketing (CBCG)

		Cr.Hrs.
Effective Sellingf.	.CBCG-210	4
Advertising Principlest.	.CBCG-213	4
Business Law I.	.CBCB-301	4
2-Business Electivest		8
		20

Personnel Administration (CBCI)

		Cr. Hrs.
Personnel Administrationt.	.CBCI-229	4
Interviewing Techniquest.	.CBCI-224	4
Business Law I.	.CBCB-301	4
2-Business Electivest		8
		20

Production Management (CBCJ)

		Cr. Hrs.
Production Management.	.CBCJ-209	4
Fundamentals of Industrial Engineeringt . . .	CBCJ-305	4
Industrial Engineering Economyt.	.CBCJ-306	4
Business Law I.	.CBCB-301	4
Electivet		4
		20

Traffic & Transportation (CBCM)

		Cr. Hrs.
Introduction to Logistics & Transportation.	.CBCL-234	4
Traffic & Transportation Law Rates, Accounting & Control.	.CBCL-239	4
1 -Transportation & Logistics Elective.		4
Business Law I.	.CBCB-301	4
Elective!		1
		20

To transfer these courses to RIT's College of Business you will be required to complete subsequent courses in the same subject area.

†Acceptable as free elective transfer credit into baccalaureate degree programs in RIT's College of Business.

Professional courses may be counted in management diploma and AAS business/management programs.

The Arts/General Education

The arts side of Business and the Arts includes courses and programs in liberal arts and humanities, behavioral and social science and communication. These are often referred to as general education courses. In the Arts we also offer programs providing credentials which take advantage of RIT's strengths within the arts and humanities. Diploma options are offered in the fine and applied arts (CHAA) and crafts (CHAC). as well as the associate in arts degree in general education (CHGE). Certificates in technical communication and a concentration in deaf studies also are available.

General Education
General education courses serve a pivotal function within all programs of the College of Continuing Education. These courses provide the foundation upon which professional knowledge is built. The faculty introduces the basic concepts and skills of the arts, humanities, communication, and the behavioral and social sciences.

Each professional and technical program within CCE selects from general education courses essential to developing professional and personal competence. Students are then given a range of free electives to fill out personal interests.

Writing Program and Exit Test
To insure that graduates of all CCE associate degree programs will be prepared to meet the writing demands of their careers. CCE instituted the following writing program in September 1984.

1. Diagnostic Test. All students planning to register for Dynamic Communications I (0236-204), or Communications 220 (0236-220) must take a 40-minute diagnostic placement test prior to registration. (Students may register for 205 without pretesting if they have credit for 204.) Results of the tests will allow us to place students in the most appropriate course for developing their written and other communication skills. Students may take the diagnostic test at their convenience in the CCE office (M-R, 8:30 a.m.-7:30 p.m. and F, 8:30 a.m.-3 p.m.) or during Open Registration (see quarterly schedule for testing times).
2. Exit Test. An exit test given prior to the last week of classes in 205 and 220 is part of the communications requirements for all associate degrees. Students who do not pass the test may work out a program with their instructors for mastering needed skills and may re-take the exit test at a later time. When the test has been passed, students will receive the grade they earned in the course.

General Education AA degree program

Ronald Hilton, Chairperson

The associate in arts (AA) is the only liberal arts degree program offered by the College of Continuing Education. Students will sample literature, arts, philosophy, history, and the other disciplines that have traditionally been at the core of a college education. At the same time, they will consider the relationship of these studies to 20th century technology and business.

After fulfilling the basic course requirements, students finish the degree by choosing one of two options: to deepen understanding of the liberal arts by adding courses in the humanities, communication, and social sciences; or to take advantage of RIT's extensive opportunities in career training by including 20 credits of study in a specific career skill. Areas of career study include:

Accounting
Advertising Design
Technical Communication
Communication
Public Relations Communications
Fine Arts
Personnel Management
General Management & Supervision
Industrial Management
Small Business Management
Real Estate
Marketing
Deaf Studies

For more information on the career skills option contact the Division of Business and the Arts at 475-5027.

Course requirements, General Education (CHGE), AA Degree

		Otr. Cr.		Otr. Cr.
	Humanities . . CHGH-201,202,203	12	Economics CHGS-221	4
	Introduction to Literature CHGH-260	4	Psychology CHGS-211	4
	Introduction to Art CHGH-210	4	Philosophy . CHGH-270	4
	Introduction to Music Appreciation CHGH-230	4		20
	Modern Europe CHGH-323 *or* Modern America CHGH-325	4	Career Skills Area . .	20
	Political Science CHGS-261	4		
	Contemporary Science Elective . .	4		
	Science, Technology & Humanity Elective	4		

'Students may petition the chairperson for Liberal Arts to apply courses outside the area generally regarded ***as*** *general education electives. This must be a written request.*

Public Relations Communications Certificates

Ronald Hilton, Chairperson

Public relations communications are vital to virtually every human 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. The demand for people trained in the special skills of public relations communications will continue to grow well into the 1990s.

Underlying successful public relations communications are skills in two key areas: writing and graphic communication. CCE now offers a certificate program in each of these specialities. Both programs share a common core of courses that provide an introduction to public relations and teach 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 for non-artists) focuses on understanding the components of the advertising process, the use of effective design principles in the preparation of layouts, and the combining of 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 PR responsibilities; or who have been working in a particular aspect of public relations and who wish to upgrade or broaden their skills; and/or who have been performing PR tasks for which they have had little formal preparation. Courses in these programs were developed with the assistance of Rochestei^area public relations communicators and are taught by experienced professionals.

Up to four credits may be awarded by examination or for courses taken at another college. 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. Courses may be applied toward appropriate diploma, AAS, and BS degree programs. Students must achieve a program GPA of at least 2.0 in order to be certified. For advising and further information about these courses, transfer credit, credit for college-level learning, and financial assistance, call Ronald Hilton, 475-4986.

Core Courses, Certificates in Public Relations Communication	Credit Hours
Introduction to Public Relations-CHGL-360	2
Psychology of Persuasion-CBGS-320	2
Advertising Evaluation & Techniques-CBCG-214	4
Managing the Project-CHGL-332	2
Core Total	10

Certificate in Public Relations Communications—Professional Writing	Credit Hours
Core Courses	10
Writing for the Organization I-CHGL-365	2
Writing for the Organization II-CHGL-366	2
Promotional Writing-CHGL-331	2
Scripting and Speechwriting-CHGL-367	4
Certificate Total	20

Certificate in Public Relations Communications—Graphic Communication	Credit Hours
Core Courses	10
Graphic Communication for the Non-Artist I-CHAD-270	3
Graphic Communication for the Non-Artist II-CHAD-271	3
Art for Reproduction-CHAD-220	3
Certificate Total	19

Technical Communication Certificates

Elizabeth Conley, Chairperson

In this age of information, all kinds of organizations, large and small, have increasing needs for individuals skilled in documenting, packaging, presenting, and managing technical and scientific information. Whether these tasks are done within the company or outside by contract, organizations involved in manufacturing, materials handling, computer products, marketing, and medical and scientific products all need professionally prepared documents, brochures, manuals, and other materials for product users, service technicians, purchasing managers, trainers, and other employees and customers.

The following sequence of courses, designed to be completed in two consecutive quarters of study, is intended to provide a strong, practical foundation in technical communication.

Certificate in Basic Technical Communication	Credit Hours
Phase I:	
Technical Writing & Editing-CHGL-323	4
Research Techniques-CHGL-324	2
Phase II:	
Instructional Design Principles-CHGL-325	2
Document Design Principles-CHGL-326	2
Practicum: Designing Manuals-CHGL-327	2
Total Credits	12

Up to four credits may be awarded by examination or for courses taken at another college. Prerequisite for the Basic sequence is demonstration (by examination, portfolio, or transcript) of a command of standard written English. Students must achieve a program GPA of at least 2.0 in order to be certified.

For those interested in further professional development and instruction in more specialized topics, the following sequence of courses, designed to be completed in two quarters of study, is available.

Certificate in Advanced Technical Communication	Credit Hours
Phase I:	
Writing in the Sciences-CHGL-328	2
Oral Communication Skills for Technical Communicators-CHGL-329	2
Communicating Online-CHGL-330	2
Phase II:	
Promotional Writing-CHGL-331	2
Managing the Project-CHGL-332	2
Audiovisual Presentations-CHGL-333	2
Total Credits	12

Up to four credits may be awarded by examination or for courses taken at another college. Prerequisite for the Advanced sequence is completion of the Basic sequence or the equivalent. Students must achieve a program GPA of at least 2.0 in order to be certified.

Courses in these sequences were developed with the assistance of working technical communicators and are taught by experienced professionals. For advising and further information about these courses, transfer credit and financial assistance, call Betty Conley, 475-4936.

Business and Career Communication

Elizabeth Conley, Chairperson

Business leaders say that a key to success is the ability to communicate successfully. A CCE certificate of achievement in business and career communication may be earned by completing three, four-credit courses designed to cover written, oral, and visual communication skills. Courses may be taken separately and may be used as elective or professional concentration courses in appropriate CCE degrees.

Business and Career Communication Certificate Program	Credit Hours
Professional Presentations-CHGL-301	4
Discussions Skills & Leadership-CHGL-302	4
Communicating in Business-CHGL-307	4
Total	12

Deaf Studies Concentration

Ronald Hilton, Chairperson

Many individuals have deaf family members, co-workers, clients or friends. The courses in the Deaf Studies Program are designed to enable hearing persons to communicate with deaf people and to develop some understanding of the experience of being deaf through courses related to the linguistic, psychological, social, and physical aspects of deafness.

Rochester has the second highest population per capita of hearing-impaired individuals in the United States, resulting in extensive community and educational resources. Rochester is a center for habilitation, rehabilitation, social services and educational services for deaf people in New York State and across the country.

Deaf studies courses include:

CHGD-211, 212,213	Sign Language & Manual Communication Systems, I, II & III
CHGD-311, 312	American Sign Language I & II
CHGD-241, 242	Aspects & Issues of Deafness I & II

Fine and Applied Arts and Crafts Diploma Programs

Eric Bellmann, Chairperson

Fine and applied arts courses are designed to contribute to the student's personal growth and cultural enrichment. Individual courses are offered or a diploma may be earned by following a program of study in crafts, fine and applied arts, advertising design, fashion illustration, or interior design.

Options begin with introductory courses to provide students with a basic exploration of the creative process and to help them develop visual organization skills. After taking these courses, the student will be able to earn a fine and applied arts diploma by completing the requirements in any of five areas. Students may want to include printing and photography electives in their programs after receiving an advisor's approval. Some electives are offered only in alternate years.

Students enrolled in the fine and applied arts diploma program prior to Fall 1980 may elect to follow either the previous program requirements or the new program as listed.

For more information call Eric Bellmann at 475-4977.

Fine and Applied Arts and Crafts Diploma Programs (CHAAand CHAC)

Core Requirements:		**Qtr.Cr**
Basic Drawing and Media	CHAF-201,202,203	6
Basic Design	CHGH-201,202,203	6
Introduction to Art Appreciation	CHGH-210	4
		16

Program Requirements:

Craft (CHAC). In addition to the core requirements each student must become familiar with three of four areas.

	Otr. Cr.
Core Requirements*	16
Major craft courses	18
Minor craft courses	6
Third craft choice	2
Electives with advisor's approval	6
	48

Fine Arts (CHAA)		**Qtr.Cr.**
Core requirements*		16
Drawing (3 quarters)	CHAF-306	6
Basic Figure Drawing	CHAF-207	2
Figure Drawing (2 quarter credit)	CHAF-317	4
Electives with advisor's approval		20
		48

Advertising Design (CHAA)		**Qtr.Cr.**
Core requirements*		16
Display Design	CHAD-211,212,213	6
Advanced Design and Typography!	CHAD-261,262,263	6
Graphic Design	CHAD-311,312,313	6
Advertising Design	CHAD-315,316,317	6
Basic Figure Drawing	CHAF-207	2
Electives with advisor's approval		6
		48

Interior Design (CHAA)		**Qtr.Cr.**
Core Requirements*		16
Display Design	CHAD-211,212,213	6
Marketing	CBCG-361	4
Interior Design	CHAD-224,225	4
History of Interior Design	CHAD-222	2
Environmental Design	CHAD-251,252,253	6
Electives with advisor's approval		10
		48

'Core requirements are prerequisite for all diploma programs: CHAA and CHAC.
fFormerly titled Lettering and Layout.

Graphic Arts and Photography

The arts side of Business and the Arts also offers graphic arts programs that are structured to provide students with a broad understanding of the graphic arts field, and, at the same time, allow them to select a major in design, printing, and photography. In addition, programs leading to an AAS in professional photography and an AAS/BS in photographic science are available.

Printing Diploma

Linda Tolan, Adjunct Chairperson

This program utilizes the laboratories of the School of Printing Management and Sciences, which are completely equipped with the most modern printing machinery for all processes of producing the printed word, including flexography screen printing, lithography and gravure. The printing program leads to a diploma indicating competency in specialized areas of printing as well as a practical understanding of the entire printing operation. All printing courses shown are open to students not enrolled as diploma candidates. Courses in the printing diploma (at the 200 level or higher) may be applied towards Graphic Arts degrees.

Printing Diploma Program

	Credit Hours
Introduction to Printing CHGT-201, 202, 203	6
Copy Preparation-CHGT-227	3
Color Separation Camerawork CHGT-111, 112, 113	6
Offset Presswork CHGT-141, 142, 143	6
Offset Film Assembly CHGT-221, 222, 223	9
Reproduction Camerawork CHGT-301, 302, 303	6
Human Relations CBCE-101, 102, 103	6
Printing Electives	4
Total	46

Photography Diploma

Andrew Davidhazy,
Adjunct Chairperson

This sequence of photographic courses is designed to prepare students for the highly competitive field of professional photography. The requirements combine a thorough technical education in photography with an introduction to human relations. Because of the specific nature of the diploma, all six required courses must be completed before a diploma can be earned. Students may apply photography courses completed for the diploma towards the associate in applied science degree in professional photography. Students completing the AAS in professional photography may continue their studies in the Graphic Arts bachelor degree program.

Photography Diploma Program

	Credit Hours
Basic Professional Photography CHGP-201, 202, 203	12
Color Photography CHGP-211, 212, 213	12
Commercial Photography CHGP-241, 242, 243	9
Portrait Photography CHGP-231, 232, 233	9
Portrait Retouching CHGP-331, 332, 333	3
Commercial Retouching CHGP-321, 322, 323	3
Human Relations CBCE-101, 102, 103	6
or	
Psychology: Introduction-CHGS-211	4
Total	52-54

AAS and BS Program in Photographic Science (CHGR)

Andrew Davidhazy, Adjunct Chairperson

Today, the complexity of the photographic process and its manufacturing technology is easily matched by its multitude of uses. From its very beginnings, photography attracted the interest of many famous scientists. Photographic materials, for example, triggered the discovery of x-rays and enabled the discovery of distant galaxies in space and elementary particles on earth.

As a result, photography's impact on society has been tremendous and continues to increase. The graphic arts industry is now almost completely dependent on photographic processes. New light-sensitive processes have found numerous applications, particularly in the duplicating field, and hold much promise for other future non-silver imaging processes. Photosensitive resins are essential to the manufacture of microcircuits in the electronics industry. Electronic image retrieval, analysis and management systems are a powerful new force in the field.

It is evident that a field of such variety and growth potential should provide interest, challenge and reward to a substantial number of technicians, scientists and engineers for years to come.

The degree program in photographic science provides students with a thorough understanding of the photographic process, from fundamental laws and principles in sensitometry, photographic chemistry and radiometry, to state-of-the-art research and practice in emulsion chemistry, color theory, non-silver processes, image evaluation and photographic optics.

These topics combined with a solid background in mathematics, chemistry, physics and statistics prepare students for a promising career as an engineering technician at the completion of the associate degree or as a photographic technologist at the bachelor's level.

Beyond the requirements in the photographic science area students are encouraged to examine other fields of interest through elective courses in electronics, chemistry, physics, or other appropriate subjects.

The program prepares students for an interdisciplinary relationship with chemists, physicists, electrical and mechanical engineers developing new photosensitive systems, improving existing products, or finding new applications for a variety of imaging systems in science, medicine or industry.

Most courses are designed to also meet the needs of local engineers and scientists who wish to refresh their background in the photographic process, or who want to explore a new or specialized subject.

Technical electives for photographic science (CHGR)
The following is a partial list of courses that fulfill the technical elective requirements for the photographic'scicnce program:

CHGR-421	Mathematical Methods in Photographic Science
CHGR-520	Electrostatic Imaging Methods
CHGP-351	Industrial Photography Instrumentation
CQAS-711, 712	Fundamentals of Statistics
CQAS-721	Control Charts
CTDS-202	Introduction to Computer Science
CTDP-305	Assembly Language Programming
CTIL-201, 202, 203	Elements of Electricity and Electronics
CTEM-301-	Statics

Other courses not listed above are acceptable. These include advanced topics in chemistry, physics, statistics, electronics, and mechanics. Up to six quarter credits may be scheduled in management. You should schedule all electives with your advisor's approval.

Course requirements, Photographic Science (CHGR), AAS and BS degrees

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION	Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
102 Quarter Credits	Phase 1	Algebra & Trigonometry . . . CTAM-210 Engineering Chemistry . CTCC-241,242,243(lec.) -246,247,248 (lab.)	4 12	Communications'. . . . . CHGL-220 and Literature. . . . . CHGH-260 or Dynamic Comm. I". . . . . CHGL-204 and Dynamic Comm. II. . . . . CHGL-205 Communications Elective	8 8 4	Fundamentals of Photographic Science . . . . CHGR-207,208,209 Black and White Sensitometry.. CHGR-227,228,229	12 12
	Phase 2	Calculus. . . . . CTAM-251,252,253 College Physics CTCP-201,202,203 (lec.) -206,207,208 (lab.)	12 9 3	Psychology. . . . . CHGS-211 Economics. CHGS-221	4 4	Radiometry. . . . . CHGR-237,238 Photographic Chemistry . CHGR-217,218,219(lec.) 224,225,226 (lab.)	6 12
92 Quarter Credits	Phase 3	Calculus. . . . . CTAM-305 Differential Equations CTAM-306	4 4		8	Optics. . . . . CHGR-407,408 409 Image Evaluation . CHGR-417,418,419 or Quality Control of Photo-Solutions . . . . CHGR-307,308,309 Color Sensitometry . CHGR-414,415,416	9 9 9 10
	Phase 4	Electives (Computer Programming)	8 14		8	Theory of Photo Process . . CHGR-527 Theory of Color Process . . CHGR-528 Non-silver Imaging Systems . CHGR-529 Technical Bectives	4 • 4 4 16

In order to meet program objects and prerequisites of later courses, transfer students who have an associate degree may be required to take courses with Phase III and IV for appropriate work completed by the time of transfer.
The AAS degree is awarded upon the student's satisfactory completion of all courses in Phase I and II. In the case of transfer students seeking a degree, 45 credits must be completed at RIT.
"These communications courses require pretest; call475-2234 for information.
Students who take CHGL-204 should also take CHGL-205; students who take CHGL-220 should also take CHGH-260. AIIBS students must also satisfactorily pass a communications competencytest.

AAS Program in Professional Photography (CHGP)

Andrew Davidhazy, Adjunct Chairperson

The role of photography has become increasingly influential in the development of modern technology. In its multitude of applications it plays a vital role in communication, business, medicine and education, as well as being the primary means of recording moments of the present for future enjoyment.

Although at this time competition in the fields of commercial, advertising and freelance photography is very great, there is a need for qualified technicians and specialists particularly in the fields of marketing, training, medicine, graphic arts, photofinishing, law enforcement, and others.

The degree program in professional photography provides students with a balanced education comprised of courses in science, general education and applied photography. Specific educational goals can be met through careful selection from a comprehensive list of professional electives.

Course requirements
The AAS degree is awarded after completion of all courses in Phases I and II. Transfer students seeking a degree must complete 45 credits at RIT.

The primary aim of the program is to prepare students with a broad background in photography so that they may modify general knowledge to fit their particular job specialty.

Although courses are designed to serve the needs of students with a well-defined career objective, most are also suitable for improving photographic background or providing photographic training that would help further develop job skills. After receiving the AAS degree, graduates may pursue a further degree in the BS program in graphic arts with a major in photography with complete transfer of credit. Consult with chairperson for details.

Professional electives for professional photography (CHGP) degree

CHGP-404, 405, 406 Architectural Photography
CHGP-241, 242, 243 Commercial Photography
CHGP-401, 402, 403 Fashion Photography
CHGP-221, 222, 223 Illustrative Photography
CHGP-351 Industrial Photography-Instrumentation
CHGP-352 Industrial Photography—A.V. Techniques
CHGP-353 Industrial Photography-Special Topics
CHGP-301, 302 Motion Picture Photography
CHGP-431, 432,433 Photographic Communication
CHGP-411 Photography of the Natural World
CHGP-231, 232,233 Portrait Photography
CHGP-321, 322, 323 Retouching, Commercial
CHGP-331, 332,333 Retouching, Portrait
CHGP-366 Dye Transfer Printing

Other courses not listed above are also acceptable. This includes topics in printing design and audio visual areas. Up to six quarter credits may be scheduled in management, quality control, electronics or other technical areas. At least 15 quarter credits must be scheduled from the professional photography area. All electives should be scheduled with the chairperson's approval.

Course requirements, Professional Photography (CHGP), AAS degree

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION	Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
95 Quarter Credits	Phase 1	Technical Mathematics . CTAM-201,202 or Mathematical Thought and Processes. . . . . CTAM-205 And Modern Mathematical Methods. CTAM-206	8	Communications". . . . . CHGL-220 and or Dynamic Comm. I*. . . . . CHGL-204 and DynamicComm.il. . . . . CHGL-205 Communications Elective Psychology. CHGS-211	8 8 4 4	Basic Professional Photography . . CHGP-201,202,203	12 12
	Phase 2		12	Economics. CHGS-221	4 4	Color Photography . CHGP-211,212,213	12 15

Suggested photographic electives are listed below. All electives for degree seeking students are to be selected with advisor's approval. At least 15 quarter credits must be from the photography

•These communications courses require a pretest; call 475-2234 for information. Students who take CHGL-204 should also take CHGL-205; students who take CHGL-220 should also take CHGH-260. All BS students must also satisfactorily pass a communications competency test.

The Graphic Arts Degree Program
(CHGT)

Eric Bellmann
Andrew Davidhazy
Linda Tolan, Chairpersons

This program is structured to provide students with an opportunity to receive a broad understanding in the graphic arts field, and, at the same time, to select a major in design, photography or printing.

The professional courses in this program are presented in a manner which provides a broad practical background in printing, photography, design, and related fields as well as a concentration of study in the student's major. Classroom instruction is supplemented by related work in studios and laboratories where actual experience is gained.

Students need not take courses in the order listed, as long as all courses are completed in one phase before proceeding to the next. After successfully completing all courses in Phases I and II, students will receive an AAS degree. If students are transferring from another institution, students must complete 45 credits within CCE.

Course requirements, Graphic Arts (CHGT), AAS and BS degrees with options in design, printing or photography

		MATHEMATICS AND SCIENCE	Otr. Cr.	GENERAL EDUCATION	Otr. Cr.	PROFESSIONAL	Otr. Cr.
92 Quarter Credits	Phase 1	Technical Mathematics . CTAM-201.202 or Mathematical Thought and Processes. . . . . .CTAM-205 And Modem Mathematical Methods. CTAM-206	8	Communications'. . . . .CHGL-220 and Literature. . . . . .CHGH-260 or Dynamic Comm. I*. . . . .CHGL-204 and Dynamic Comm. II. . . . .CHGL-205 Communications Elective . . . .* Psychology. CHGS-211	8 8 4 4	Intro to Printing . . CHGT-201,202,203 Basic Professional Photography . . CHGP-201,202,203 Basic Design . . . . CHAD 201,202,203	6 12 6
	Phase 2	Contemporary Science. . . . .CTCS-221,222.223 *or* Engineering Chemistry . CTCP-201,202,203(lec) -246.247,248 (lab) or Physics . . . . CTCP-201,202,203 (lee) -206,207,208 (lab)	12	Economics. CHGS-221	4 4	Paper and Printing . . . CHGT-251,252 Technology of Typesetting . . CHGT-237 GraphicDesign . . CHAD-311,312,313 Professional Electives	4 3 2 6 9
94 Quarter Credits	Phase3	Science, Technology and Society Electives	8	Electives	20	Reproduction Camerwork . . CHGT-301,302,303 Printing Plates. . . . .CHGT-231,232 Printing Process. . . . . .CHGT-341 Advertising. CHAD-301.302	6 4 2 8
	Phase 4			Electives	16	Estimating. . . . . .CHGT-219 Imposition and Finishing . . . CHGT-421 Professional Electives	4 2 24

In order to meet program objectives and prerequisites ot later courses, transfer students who have an associate's degree may be required to take courses within Phase I and II. In many instances, such transfer students will be granted credit within Phase III and IV for appropriate work completed by the time of transfer.
These communications courses require pretest; call 475-2234 for information. Students who take CHGL-204 should also take CHGL-205; students who take CHGL-220 should also take CHGL-260. All BS students must also satsitactorilypassa communications competency test.

Science and Technology

Henry Cooke, Director
Barbara Warth, Academic Program Assistant

This division in CCE offers a variety of technical and scientific programs of study. Included are:

- AS in engineering science, computer science*
- AAS in applied science in building technology, electrical technology, electromechanical technology, manufacturing technology, mechanical technology, and computer systems
- BS in applied science in chemistry, mechanical, electrical and mechanical-industrial

'pending approval by New York State Education Dept.

Each program is carefully designed to meet the student's needs as well as the particular needs of local industry for technical personnel trained to meet the requirements of Rochester's expanding industrial community.

Courses for people on rotating work schedules
If rotating work schedules make it impossible for an individual to attend regular evening classes, enrollment in certain courses is also offered during the day, and are taught by the same instructors.

Courses in this program include basic technical and general education courses which can be applied to a diploma or AAS degree program. It is necessary to begin these course sequences in September. There are no beginning entry points in December or March for rotating work schedules.

Mathematics diagnostic examination
In order to take any of the beginning mathematics courses, a student must take a diagnostic examination to determine the level at which he or she should start the mathematics courses. An advisor should be consulted to determine where to start the mathematics sequence. Call 475-2234 to arrange an appointment to take the math exam. There is no charge for this exam.

Degree Programs BS in Applied Science

The BS in applied science programs is designed for the individual with better than average preparation in high school mathematics and science. If a student is deficient in mathematics, he or she may complete CTAM-101, 102, 103 before entering this program.

An intensive core of courses in mathematics, physics, chemistry, and the basic engineering sciences is required in these programs while allowing the student to develop some depth in the interest area of choice.

After completing approximately half the courses in the BS program, students receive an AAS degree. If the student already holds an AAS degree, he or she may be able to enter a BS program with minimal loss of credit. Consult an advisor for transcript evaluation before entering these programs.

Computer Systems Associate in Applied Science Degree

Alfred C. Haacke, Chairperson

The goal of this program is to provide students with the programming skills and the computer science fundamentals to enter careers as computer programmers in business or information systems.

Aside from programming skills, students acquire some of the mathematics necessary to move from programming as an art to programming as a science.

Prospective students are urged to see an advisor before enrolling in classes. For an advising appointment call 475-2218.

Course requirements, (CTDD), AAS Degree

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION	Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
	Phase 1	Technical Mathematics . . . CTAM-201 Technical Mathematics . . . CTAM-202 Discrete Mathematics . . . . CTAM-265 Discrete Mathematics . . . . CTAM-266 Business Statistics. CBCH-351	4 4 4 4 4	Communications". . . . . CHGL-220 and Literature. . . . . CHGH-260 or Dynamic Comm. 1*. . . . . CHGL-204 and Dynamic Comm. II. . . . CHGL-205 Humanities Electives . . . . CHGH-	S or 8	Introduction to Computer Science. . . . CTDS-202 Programming 1- Algorithmic Structures . . . CTDP-241 Programming II- Data Structures. . . . . CTDP-242 Assembler Language. . . . CTDP-305	4 4 4 4
	Phase 2			Social Science Electives . . CHGS- Liberal Arts Electives . . . . CHG?-	8 8	Programming III- Design and Validation . . . CTDP-243 Digital Computer Organization. . . . . CTDS-315 Data Organization and Management. . . . . CTDS-325 Business Applications Programming. . . . . CTDP-307 System Specification, Design and Implementation . . . . CTDS-335 Computer Science Elective" Organization and Management. . . . . CBCE-203 Financial Accounting. . . . CBCA-201	-4 4 4 4 4 4 4 4

' Students may choose from:
CTDS-420 Data Communications Systems
CTDS-485 Data Base Systems

Applied Science-Chemistry Program (CTCC)

Alfred C. **Haacke,** Chairperson

The chemistry curricula leading to the AAS and BS degrees are designed to provide students with a sound background in the fundamental principles in a broad spectrum of chemistry disciplines. Strong emphasis is on mathematical and physical aspects of the science of chemistry, and the more practical aspects of the science are presented in various laboratory courses. In the BS degree program professional elective courses provide students with the opportunity for specialization in the area of their choice.

Courses need not be taken within any phase in the sequence listed as long as all courses in one phase are completed before proceeding to the next phase. The AAS degree is awarded upon satisfactory completion of all courses in Phases I and II. Transfer students must complete 45 credits of this program at RIT before receiving a degree.

Course requirements, (CTCC), AAS and BS degrees

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION	Qtr. Cr.	PROFESSIONAL	Otr. Cr.
	Phase 1	College Algebra and Trigonometry. . . . . .CTAM-210 Calculus. . . . . .CTAM-251.252 Computer Techniques . . . CTDP-201	4 8 2	Communications'. . . . .CHGL-220 and Literature. . . . . .CHGH-260 or Dynamic Comm. I". . . . .CHGH-204 and DynamicComm.il. CHGL-205	8 or 8	General Chemistry . CTCC-211,212,213 Qualitative Inorganic Analysis . CTCC-216 Quantitative Analysis . . CTCC-217,218 Organic Chemistry . CTCC-231,232,233 (lee.) 237,238 flab.)	9 2 4 13
	Phase 2	Calculus. . . . . .CTAM-253 Physics . . . . CTCP-301,302,303 flee.) CTCP-306,307.308 (lab.)	4 12 3	Psychology. . . . . .CHGS-211 Economics. . . . . .CHGS-221 "Electives	4 4 4	Analytical Chemistry— Instrumental Analysis . CTCC-311 (lee.) 316 flab.) Analytical Chemistry Sepai ations. . . . .CTCC-312 (lee.) 317 (lab.) Introduction to Physical Chemistry. . . . . .CTCC-313 flee.)	5 5 3
	Phase3	Calculus. . . . . .CTAM-305 Engineering Statistics . . . . CTAM-341 Mathematics Elective	4 4 4	History or Political Science Elective Literature Elective	4 4	Chemical Literature and Technical Writing. . . . . .CTCC-417 Qualitative Organic Analysis. . . . . .CTCC-525(lec.) 535 (lab.) Physical Chemistry . CTCC-401,402,403(lec.) 405,406,407 (lab.)	2 3 15
	Phase 4	Modern Physics. CTCP-457,458	8	"Electives	16	Instrumental Analysis . . CTCC-511,512 Inorganic Chemistry. . . . .CTCC-551 + Professional Electives	8 4 21

**These communications courses require pretest; call 475-2234 for information. Students who take CHGH-204 also take CHGL-205. All BS students must also satisfactorily pass a communications competency test.*

" These electives must be selected from the areas of humanities, communications or behavioral sciences offered in the liberal arts area; subject to the advisor's approval.

+ At least one of these professional elective courses must be taken in the area of organic chemistry. The selection of all professional elective courses is subject to advisor's approval.

In order to meet program objectives and prerequisites of later courses, transfer students who have an associate degree may be required to take courses within Phases I and II. In many instances, such transfer students will be granted credit within Phases III and IV for appropriate work completed by the time of transfer.

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

Applied Science-Electrical Program (CTBE)

Henry Cooke, Chairperson

This intensive program in the electrical field includes a sound basis in mathematics, science and general engineering. This broad fundamental curriculum will provide a solid technical foundation for later specialization in the numerous branches of the electrical industry. The remainder of the curriculum is devoted primarily to developing methods of analysis and applying them to the solution of problems in the electrical field.

Courses need not be taken within any phase in the sequence listed, as long as courses in one phase are completed before proceeding to the next phase. The AAS degree is awarded upon satisfactory completion of all courses in Phases I and II. If you are a transfer student seeking a degree, you must complete 45 credits of this program at RIT and meet with an advisor before registering, to obtain a preliminary evaluation of your previous course work.

Course requirements, (CTBE), AAS and BS degrees

	MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION	Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
Phase 1	College Algebra and Trigonometry CTAM-210	4	Communications". CHGL-220	8	Engineering Graphics . . CTID-211,212	4
	. . . CTAM-251,252	8	and Literature. CHGH-260			
	Computer Techniques . . . CTDP-201	2	or	or		
	Engineering Chemistry . . . CTCC-241,242 (lec.)	6	Dynamic Comm. I*. CHGL-204	8		
	246,247 (lab.)	2	and Dynamic Comm. II. CHGL-205			
Phase2	. . . . CTAM-253	4		4	Engineering Mech. . . . CTBM-341,342	8
	. . . CTAM-305	4	Psychology. CHGS-211	4	Circuit Analysis . . CTBE-401,402,403(lec.)	12
	Physics . . . . CTCP-301,302,303 (lec.)	12			406,407,408 (lab.)	
	306,307,308 (lab.)	3			MaterialsTechnologyI CTEF-314	3
	Engineering Math CTAM-328	4			Materials Technology II CTEF-315	3
Phase 3	Differential Equations CTAM-306	4	History or Political Science Elective	4	Electric and Magnetic Fields. CTBE-411,412,413	L12
	CTCP-457 458	8			Electronics. CTBE-421,422,423	12
	CTCP-459	4			Thermodynamics. CTBM-401	4
Phase 4	Complex Variables CTAM-420	4	"Electives	12	Electromechanical Energy	4
				4	Control Systems CTBE-511,512	8
					Electives	12

** These communications courses require pretest; call475-2234 for information. Students completing BS degrees must also pass a communications competency test.*

" These electives must be selected from the areas of humanities, social sciences and language arts subject to advisor's approval.

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

Mechanical-Industrial Program (CTBI)

Henry Cooke, Chairperson

The mechanical-industrial curriculum integrates management courses with courses in engineering, science and general education in order to satisfy industry's need for qualified personnel in the manufacturing management field. Graduates of this program have a combined background in management and engineering. Students need not take courses in the order listed, as long as all courses are completed in one phase before proceeding to the next phase. After successfully completing all courses in Phases I and II, students receive an AAS degree. In the case of transfer students seeking a CCE degree, 45 credits of this program must be completed at RIT.

Course requirements, (CTBI), AAS and BS degrees

		MATHEMATICS ANDSCIENCE	Qtr. Cr.	GENERAL EDUCATION	Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
	Phase 1	College Algebra and Trigonometry . . . CTAM-210 . . CTAM-251.252 Computer Techniques . . . CTDP-201 Physics . . . . CTCP-301,302,303 (lec.) 306,307,308 (lab.)	4 8 2 12 3	Communications* CHGL-220 and CHGH-260 or Dynamic Commun. I* . . . . CHGL-204 and Dynamic Comm. II CHGL-205	8 or 8	Machine Shop . CTIS-201,202,203(lec.) 206,207,208 (lab.) Engineering Graphics CTID-211,212,213 Accounting for Engineers CBCA-207,208	6 6 8
	Phase2	Calculus . . . . CTAM-253 Calculus CTAM-305	4 4	Economics CHGS-221 Psychology CHGS-211	4 4 '	Organization and Management. . . . . .CBCE-203 Engineering Mechanics . CTBM-341,342 Manufacturing Analysis. . . . .CTEF-201,202,203 Strength of Materials . . CTBM-344 (lec.) 354 (lab.)	4 8 9 3 1
	Phase 3	Engineering Chemistry . . . CTCC-241,242 (lec.) 246,247 (lab.) Engineering Statistics . CTAM-341,342	6 2 8	Psychology - Behavior in Industry CHGS-316	4	Data Processing. . . . . .CBCC-321 Electrical Engineering Principles CTBE-461,462,463	4 12
	Phase4	Mathematics Elective	4	CHGS-231 Professional Presentations . CHGL-301 "Electives	4 4 12	Engineering. . . . . .CBCJ-305 Industrial Engineering Economy. . . . . .CBCJ-306 Electives	4 . 4 24

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

' These communications courses require pretest; call 4 75-2234 for information. Students completing BS degrees must also pass a communications competency test.

" These electives must be selected from the areas of humanities, social sciences and language arts, subject to advisor's approval.

Mechanical Program (CTBM)

Henry Cooke, Chairperson

This curriculum is designed to provide the student with a sound basis in mathematics, science and general engineering. Courses in theory are supplemented by laboratory work to increase the understanding of industrial methods and techniques. The knowledge and skills acquired in this program apply to a wide variety of industrial assignments in mechanical design and manufacturing.

Courses need not be taken in the order listed, as long as all courses in one phase are completed before proceeding to the next phase. The AAS degree is awarded upon satisfactory completion of all courses in Phases I and II. In the case of transfer students seeking a degree, 45 credits of this program must be completed at RIT.

Course requirements, (CTBM), AAS and BS degrees

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION	Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
	Phase 1	College Algebra and Trigonometry. CTAM-210	4	Communications' CHGL-220		Machine Shop . CTIS-201,202,203 (lec.)	6
		Calculus. CTAM-251,252	8	and	8	206,207,208 (lab.)	
		Computer Techniques . . . CTDP-201	2	Literature. CHGH-260		Engineering Graphics CTID-211,212,213	6
		Engineering		or	or		
		Chemistry . . . CTCC-241,242 (lec.)	6	Dynamic Comm. I* CHGL-204			
		246,247 (lab.)	2	and	8		
				DynamicComm.il CHGL-205			
	Phase2	Calculus. CTAM-253	4	Economics. CHGS-221	4	Engineering Mechanics . CTBM-341,342	8
		Calculus. CTAM-305	4			Manufacturing	
		Physics . . . . CTCP-301,302,303 (lec.)	12			Analysis. CTEF-201,202,203	9
		306,307,308 (lab.)	3			Strength of Materials . . CTBM-344 (lec.)	3
		Math Elective	4			354 (lab.)	1
	Phase3	Differential Equations CTAM-306	4	History or Political Science	4	Strength of Materials CTBM-345	4
		Boundary Value Problems . CTAM-318	4	Psychology. CHGS-211	4	Materials Technology I CTEF-314	3
		Modem Physics. CTCP-457,458	8			Materials Technology II CTEF-315	3
		Nuclear Physics. CTCP-459	4			Thermodynamics CTBM-401,402	8
						Electrical Engineering	
						Principles CTBE-461,462,463	12
	Phase 4			"Electives	12	Machine Design . CTBM-551,552,553	9
				Literature Elective	4	Fluid Mechanics CTBM-411,412	8
						Electives	6

• These communications courses require pretest; call 4 75-2234 for information. Students completing BS and B. Tech. degrees must also pass a communications competency test.
" These electives must be selected from the areas of humanities, social sciences and language arts, subject to advisor's approval.
In sequentially numbered courses, the lower numbered course is prerequisite.

Engineering Science (CTSE)

Alfred C. **Haacke,** Chairperson

This AS program in engineering science is designed to prepare the student to pursue a BS in engineering. The program permits orderly transfer into RIT's College of Engineering to continue pursuit of the baccalaureate degree in engineering through completion of upper-level courses made available during the evening hours by the College of Engineering. These degree programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

Students with a strong high school mathematics and science background can earn the engineering bachelors degree in two stages at RIT.

After earning the AS degree in engineering science students are eligible to apply to the College of Engineering for admission in the baccalaureate program in engineering. Students accepted in this program can complete an engineering degree through continued part-time study.

Course requirements, Engineering Science (CTSE), AS Degree

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION		Qtr. Cr.	PROFESSIONAL		Qtr. Cr.
48 Quarter Credits	Phase 1	Calculus CTAM-251,252,253	12		CHGL-220	4	Engineering Graphics CTID-211		2
		Physics . . . . CTCP-301,302,303 (lec.)	12		or	or	Engineering Mechanics . CTBM-341,342		8
		306,307,308 (lab.)	3	Dynamic Comm. I"	CHGL-204		Computer Programming		
					and	8	for Engineers . . . CTDP-320		4
				DynamicComm.il	CHGL-205				
48 Quarter Credits	Phase2	Calculus. CTAM-305	4	Psychology	CHGS-211	4	Circuit Analysis	CTBE-401 (lec.)	
		Differential Equations CTAM-306	4	Economics	CHGS-221	4		406 (lab.)	4
		Engineering Math. CTAM-328	4	Sociology	CHGS-231	4	Digital Systems	CTEE-321 (lec.)	3
		Engineering . . . . CTCC-241,242(lec.)	6	Literature	CHGH-260	4		CTEE-326 (lab.)	1
		Chemistry. . . . . .246,247 (lab.)	2						
		Modem Physics. CTCP-457,458	8						

• These communications courses require pretest; call 475-2234 tor information.

Computer Science Associate in Science Degree**

Alfred C. **Haacke,** Chairman

The AS program in Computer Science is designed to prepare the student to pursue a B.S. degree in computer science. The program permits orderly transfer into RIT's School of Computer Science and Technology to continue studying towards the baccalaureate degree offered part-time during evening hours by the School of Computer Science and Technology. Part-time B.S. degree students of the School of Computer Science and Technology must complete all of the school's requirements, including co-op.

Prospective students are urged to meet with an academic advisor before enrolling in this program. Please call 475-2218 for an advising appointment.

Course requirements, AS Degree, Computer Science

		MATHEMATICS AND SCIENCE		Qtr. Cr.	GENERAL EDUCATION		Qtr. Cr.	PROFESSIONAL		Qtr. Cr.
48 Quarter Credits	Phase 1		CTAM-251	4		CHGL-220	4	Introduction to Computer Science	CTDS-202	" 4
		Calculus	CTAM-252	4	or		or			
		Calculus	CTAM-253	4	Dynamic Comm. I*	CHGL-204		Programming I- Algorithmic Structures . .	CTDP-241	4
		Discrete Mathematics. .	CTAM-265	4	and		8			
		Discrete Mathematics. .	CTAM-266	4	DynamicComm.il	CHGL-205		Programming II- Data Structures	CTDP-242	4
					Humanities Electivest . . .	CHGH-	8	Assembler Language	CTDP-305	4
48 Quarter Credits	Phase2	Engineering Statistics . . .	CTAM-341	4	Social Science Electivest • •	CHGS-	8	Programming III- Design and Implementation	CTDP-243	4
		Physics	CTCP-301	4	Literature	CHGH-260	4			
		Physics Lab	CTCP-306	1	Liberal Arts Elective . . , . .	CHG7-	4	Digital Computer Organization	CTDS-315	4
		Physics	CTCP-302	4						
		Physics Lab	CTCP-307	1				Data Organization and Management	CTDS-325	4
		Physics	CTCP-303	4						
		Physics Lab	CTCP-308	1				Computer Science Elective"		4

** Students may choose from:*
CTDP-307 Business Applications Programming
CTDP-320 Computer Programming for Engineers
† Courses may not be chosen from the same discipline.
" Pending approval by the New York State Education Department.

Associate in Applied Science Programs (AAS)

Henry Cooke, Chairperson

Industrial Technnology
Associate degree programs in building technology, electrical technology, electromechanical technology, and mechanical technology are designed to allow an employed individual to develop the technical skills needed to function at the technician level and to earn the AAS degree usually required for the job title "technician." Course work is applied and practical, emphasizing laboratory experiences.

Each program contains a core of technical mathematics and physics to prepare the student for the technical courses to follow.

Candidates for this program should have completed at least two years of high school mathematics including algebra and trigonometry. Students having a deficiency in this area may qualify by completing mathematics CTAM-101, 102, 103.

Several of these beginning courses are offered on a shift schedule to accommodate those working a rotating shift. A core of general education courses is required and structured to develop the student's skills in communications and interpersonal relations essential to the technician.

Courses need not be taken within any phase in the order listed, so long as all courses in one phase are completed before proceeding to the next phase. After successfully completing all courses in Phases I and II, the student will receive an AAS degree (about 5 years of two courses per term). A student transferring from another institution must complete 45 credits of this program at RIT.

Many graduates of these programs continue on to the B. Tech. degree in engineering technology.

Electrical Technology (CTIE)
This program is designed to prepare the student for a career at the technician level in the field of electricity and electronics.

Phase I is devoted to providing the student with the mathematics and science background necessary to master the technical courses which follow. These technical courses provide the broad practical background of electricity and electronics required of the technician in industry. Instruction is supplemented by related work in the laboratories, where the student will gain actual work experience in handling and operating electrical equipment.

Course requirements, (CTIE), AAS degree

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION		Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
	Phase 1	Technical Mathematics . CTAM-201.202 Technical Calculus. . . . . .CTAM-203 College Physics CTCP-201.202,203 (lec.) 206,207.208 (lab.)	8 4 9 3	Communications* and Literature or Dynamic Comm. 1" and Dynamic Comm. II	CHGL-220 CHGH-260 CHGL-204 CHGL-205	8 or 8	Engineering Graphics_____CTID-211,212 Elements of Electricity and Electronics . . CTIL-201.202,203(lec.) 206.207,208 (lab.)	4 12
95 Quarter Credits	Phase2			Psychology Economics	CHGS-211 CHGS-221	4 4	Applied Electronics . CTEE-361,362,363 366,367,368 Machines and Power CTIL-301,302 Systems. . . . . .306,307 Computer Techniques . . . . CTDP-201 Digital Systems. . . . . .CTEE-321 Digital Systems (lab). . . . .CTEE-326 Programmable Controllers . . CTEE-331 Microprocessors. . . . . .CTIL-353 Microprocessors (lab) . . . . CTIL-358 Electivest	12 8 2 3 1 3 3 1 4

† All electives must be selected with advisor's approval.
** These communications courses require pretest; call 475-2234 for information.*

Electromechanical Technology **(CTIL)**

The manufacture of new and sophisticated equipment and complicated devices in which a number of electrical, electronic and mechanical principles are involved in one function or one piece of equipment, has led to the demand by industry for a new technology recognized by the composite word "electromechanical." A graduate of this dual-discipline program will be qualified to assist in design and development of new devices and to install, operate, service and maintain complex electromechanical assemblies. A graduate could also qualify for employment in automation and numerical control systems. The curriculum has a mathematics and science base with applications in electricity, electronics and mechanics. The emphasis is on the interrelationship of electronic and mechanical principles in systems and devices in which these principles are interdependent.

David Onesti, Adjunct Chairperson

Course requirements, (CTIL), AAS degree

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION		Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
	Phase 1	Technical Mathematics . CTAM-201,202 College Physics CTCP-201,202,203 (lec.) 206,207,208 (lab.)	8 9 3	Communications' CHGL-220 and Literature CHGH-260 or Dynamic Comm. I' CHGL-204 and Dynamic Comm. II CHGL-205		8 or 8	Engineering Drawing . CTID-201,202,203 Elements of Electricity and Electronics . . CTIL-201,202,203 (lec.) 206,207,208 (lab.) Mechanical Components and Mechanisms. CTIL-221,222	6 12 8
95 Quarter Credits	Phase2			Psychology CHGS-211 Elective		4 4	Machine and Power Systems. . . . .CTIL-301,302 (lec.) 306,307 (lab.) Pneumatic and Hydraulic Systems. . . . . .CTIL-303 (lec.) 308 (lab.) Digital Systems. . . . . .CTEE-321 CTEE-326 (lab.) Computer Systems. . . . . .CTEE-323 Electromechanical Devices and Systems. . . . . .CTIL-351,352 Microprocessors (lec.) . . . . CTIL-353 Microprocessors (lab.) . . . . CTIL-358 Elective	8 4 3 1 3 8 3 1 3

** These communications courses require pretest; call 4 75-2234 for information.*

Building Technology (CTIJ)

This program is structured to provide the student with a broad understanding of the building industry, while majoring in architectural technology or construction technology.

The architectural technology major provides in-depth training in all aspects of architectural drawing to qualify a graduate for employment as an architectural technician. The professional courses in this major are designed to meet individual requirements.

The construction technology major provides a more general background in building construction and qualifies the student for career opportunities in the building industry.

In addition to purely technical courses relating to the building industry, the program includes courses in college mathematics and physics as well as a selection of courses in general education.

Course requirements, (CTIJ), AAS degree

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION	Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
	Phase 1	Technical Mathematics . CTAM-201,202 College Physics CTCP-201,202,203 (lec.) 206,207,208 (lab.)	8 9 3	Communications'. . . . .CHGL-220 and Literature. . . . . .CHGH-260 or Dynamic Comm. I'. . . . .CHGL-204 and Dynamic Comm. II. CHGL-205	8 or 8	Architectural Drawing CTIB-201,202,203,204,205,206	12
95 Quarter Credits	Phase2			Economics. . . . . .CHGS-221 Elective	4 4	Architectural Drawing" . . . . CTIB-207,208,209 Statics. . . . . .CTEM-301 Strength of Materials. . . . . .CTEM-303 Building Materials. . . . . .CTIB-241 Building Construction . . CTIB-242,243 Construction Contracting . . CTIB-251 Building Estimating (Residential)"". . . . . .CTIB-252 Building Estimating (Commercial)"". . . . . .CTIB-253 Structural Theory. . . . . .CTIB-301 Structural Design. . . . . .CTIB-302 Surveying. . . . . .CTIB-231 Electives	6 4 4 3 6 3 3 3 4 4 4 8

All electives must be selected with advisor's approval.
' These communications courses require pretest; call 475-2234 for information.
" Required for Architectural Technology.
"' Required for Construction Technology

Mechanical Technology (CTIM)
This program is designed to prepare a student for a career at the technician level in the mechanical field. Phase I provides the mathematics and science background necessary to master the technical courses which follow. These technical courses in mechanics, materials, design, and manufacturing procedures cover the broad principles of mechanical engineering. The program is designed to meet the needs of industry for training in design, development, test engineering, manufacturing and other branches of this broad field.

Course requirements, (CTIM), AAS degree

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION		Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
	Phase 1	Technical Mathematics . CTAM-201,202 Technical Calculus. . . . .CTAM-203 College Physics CTCP-201.202,203 (lec.) 206,207,208 (lab.)	8 4 9 3	Communications' and Literature or Dynamic Comm. I* and Dynamic Comm. II	CHGL-220 CHGH-260 CHGL-204 CHGL-205	8 or 8	Engineering Drawing . CTID-201,202,203 Machine Shop . . . CTIS-201,202,203 206,207,208 (lab.)	6 6 3
95 Quarter Credits	Phase 2			Economics Psychology	CHGS-221 CHGS-211	4 4	Manufacturing Analysis .. CTEF-201,202 Applied Mechanics and Strength of Materials. . . CTEM-301,302,303 Materials Technology I . . . . CTEF-314 Materials Technology II . . . . CTEF-315 Production Control. . . . . .CTEF-391 Principals of Mechanical Design. . . . .CTEM-315,316,317 Elective	6 12 3 3 3 6 6

** These communications courses require pretest; call 475-2234 for information.*

Manufacturing Technology (CTED)
This program is designed to prepare a student for a career at the technician level in the field of manufacturing. Emphasis is on the practical aspects of process and materials courses, work measurement and design, as well as the concepts of computer numerical control. Graduates of industrial training programs may find this program offers additional growth opportunity from the vocational to the professional levels.

Lower Division Technical Electives

Mechanical/Manufacturing Electives
CTEF-203 Manufacturing Analysis
CTEF-210 Industrial Plastics
CTEF-328 Report Writing
CTEF-360 Introduction to Numerical Control

Course requirements, (CTED), AAS degree

		MATHEMATICS AND SCIENCE	Qtr. Cr.	GENERAL EDUCATION		Qtr. Cr.	PROFESSIONAL	Qtr. Cr.
	Phase 1	Technical Mathematics . CTAM-201,202 Technical Calculus. . . . . .CTAM-203 Introduction to Computer and Programming CTDS-200	8 4 4	Communications" and Literature or Dynamic C omm. I* and Dynamic Comm. II	CHGL-220 CHGH-260 CHGL-204 CHGL-205	8 or 8	Machine Shop . . . CTIS-201,202,203 206,207, 208 (lab.) Engineering Drawing . CTID-201,202,203 Materials Technology I . . . . CTEF-314 Materials Technology II CTEF-315	6 6 3 3
95 Quarter Credits	Phased	College Physics CTCP-201,202,203 (lec.) 206,207,208 (lab.)	9 3	Economics Psychology	CHGS-221 CHGS-211	4 4	Manufacturing Analysis .. CTEF-201,202 Intro to Numerical Control . . CTEF-360 Statics. . . . . .CTEM-301 Strength of Materials. . . . . .CTEM-303 Report Writing. . . . . .CTEF-328 Time Study. . . . . .CTEF-380 Tool Design. . . . . .CTEF-370 Technical Electives	6 4 4 4 2 3 4 6

" These communications courses require pretest; call 475-2234 for information.

School of Applied Industrial Studies

The School of Applied Industrial Studies (SAIS) was initiated in the late 1970s to help meet the need for skilled workers in Rochester industry. The School of Applied Industrial Studies is a reaffirmation of some of the original concepts of RIT.

RIT's roots go back to the Rochester Athenaeum, which was established in 1829 "for the purpose of cultivating and promoting literature, science, and the arts." In 1885, the growing industries of Rochester declared their future independence of European trained machine designers, toolmakers, and draftsmen by setting up a Mechanics Institute to provide technical training for men and women. In 1891 the Athenaeum and Mechanics Institute of Technology merged with the stated goal of preparing students for "the making of a living and the living of a life."

SAIS has been established at RIT's City Center where extensive modern equipment and facilities are available to carry out this historic mission of RIT. SAIS programs are designed especially to prepare persons for entry level positions in a wide range of industrial organizations.

Computer-Aided Drafting Certificate
Part-time Evening
Computer-Aided Drafting is changing the role of drafters, designers, and engineering professionals. This has resulted in a need for advanced skills and knowledge in order to remain on the cutting edge of technology. The School of Applied Industrial Studies is prepared to assist you in developing these skills with two CAD Certificate Program Options in Mechanical CAD and CAD/CAM for Printed Circuit Board Design. The course requirements will vary depending upon your prior academic and employment experience. Each course is designed to teach CAD concepts as well as the specific system commands without prior computer or CAD experience. Upon the successful completion of the option requirements, students will receive a Certificate of Completion from the School of Applied Industrial Studies.

Certificate requirements

Option "A"

CAD Printed Circuit Board Design

Course requirements
CAIC-212 Schematic Interpretation
CAID-249 Fundamentals of Designing Printed Circuits
CAID-251 CAD/CAM-PCB Layout

OR

Option "B"

CAD Mechanical

Course requirements
CAID-245 Introduction to CAD
CAID-247 Computer-Aided Drafting
CAID-248 Special Study CAD/CAM

Diploma Programs
A diploma of the Institute can be earned by completing one of four technical diploma programs. These programs are carefully planned to include the basic courses in their respective specialized fields, so that maximum benefit will accrue for a minimum expenditure of time. Enrollment in or completion of a diploma program does not preclude the possibility of later pursuing a degree program; in fact some courses are applicable to degree programs if the student should decide to pursue a degree at a later time.

Students not interested in pursuing a diploma program may register for individual courses of their choice as long as they meet any prerequisites.

Diplomas of the Institute are granted in the following programs: automatic screw machine operation and set-up; instrument making and experimental work; machine shop; tool and die making; turret lathe and chucker operation and set-up.

Machine Tool Programs
Apprenticeship programs
In cooperation with local industry, CCE offers a wide selection of courses applicable to apprenticeship programs. Applicants seeking to complete courses required in apprenticeship programs should consult with their company training director to determine courses required.

Machine shop
For tool room work, there are a number of precision machines to perform the required machining operations such as: Bridgeport vertical mills, Pratt & Whitney jig bore, cylindrical grinders, surface grinders, electrical discharge machines (EDM), engine lathes, pantograph machine and punch presses for trying out of dies. Other active facilities in the machine shop are numerical control, computer-aided manufacturing (CAM), and heat treating labs.

When registering for the following programs, a student must register in the proper sequence. For example, when Shop Mathematics (CTIS-151) has been completed, the next course to complete would be CTIS-152, etc.

Specialized industrial training
Specialized intensive training programs may be developed on a one-time basis or as on-going programs to meet the specific needs of a given company or organization.

If seeking advanced standing in subjects in the machine shop area, a student must submit transcripts of courses taken at other schools and/or take an examination in those courses for which the student seeks credit. The examination fee is $50 per course. An admission card must be received before being admitted to the test. The test may be scheduled at City Center. For further information call Orville Adler, at 475-5006.

Graduate Studies in Applied and Mathematical Statistics

Statistics is the body of theories and methods which deals with the data obtained by counting or measuring the properties of populations. It may also be regarded as the science of making decisions in the face of uncertainty. Today, statistical methods are being successfully applied to solve problems and to enhance learning over a broad spectrum of industrial, research, educational, business, and government activities. To aid those needing the basic statistical tools to collect and analyze data, as well as those needing to update their present statistical skills, the master of science degree in applied and mathematical statistics is offered by the College of Continuing Education at RIT through the Center for Quality and Applied Statistics. Several options, including thesis and non-thesis options, are available. Students electing a plan of study that includes a thesis must successfully complete 36 quarter hours of course work in addition to an acceptable thesis. Non-thesis options require the candidate for the MS to successfully complete 45 quarter hours of course work.

Course Requirements

	TOOL AND DIE MAKING (CTML)
Phase 1	Mechanical Blueprint Reading . . . . . CTID-101 Machine Shop Lecture . . . . . CTIS-201,202,203 Machine Shop Lab . . . . . CTIS-206,207,208 Shop Mathematics CTIS-151,152,153
2	Advanced Machine Shop I . . . . . CTIS-104,105,106 Shop Trigonometry CTIS-154,155,156
3	Tool & Die Making I . . . . . CTIS-121,122,123 Heat Treatment CTIS-161,162
4	Tool & Die Making II . . . . . CTIS-124,125,126 Human Relations CBCE-101,102,103
5	Tool & Die Making II . . . . . CTIS-127,128,129 Electives (any 3 quarters)

	INSTRUMENT MAKING AND EXP. WORK (CTMI)
Phase 1	Mechanical Blueprint Reading . . . . . CTID-101 Machine Shop Lecture . . . . . CTIS-201,202,203 Machine Shop Lab . . . . . CTIS-206,207,208 Shop Mathematics CTIS-151,152,153
2	Instrument Making I . . . . . CTIS-111,112,113 Shop Trigonometry CTIS-154,155,156
3	Instrument Making II . . . . . CTIS-114,115,116 Heat Treatment CTIS-161,162
4	Instrument Making . . . . . CTIS-117,118,119 Human Relations CBCE-101,102,103
5	Electives (any 3 quarters)

	MACHINE SHOP (CTMS)
Phase 1	Mechanical Blueprint Reading . . . . . CTID-101 Machine Shop Lecture . . . . . CTIS-201,202,203 Machine Shop Lab . . . . . CTIS-206,207,208 Shop Mathematics CTIS-151,152,153
2	Advanced Machine Shop I . . . . . CTIS-104,105,106 Heat Treatment CTIS-161,162
3	Advanced Machine Shop II . . . . . CTIS-107,108,109 Human Relations CBCE-101,102,103
	Electives (any 3 quarters of the following): Precision Measurement . . . . . CTIS-101,102,103 Engineering Drawing . . . . . CTID-201 202 203 Industrial Plastics . . . . . CTEF-210 Numerical Control (CNC) Mill . . . . . CTIS-281 Numerical Control (CNC) Lathe . . . . . CTIS-282 Computer Programming for N/C (CAM) . . . . . CTIS-283 Mechanical Blueprint Reading II CTID-102

	AUTOMATIC SCREWMACHINE, SET-UP AND OPERATE (CTMR)
Phase 1	Hand Screw Machine . . . . . CTIS-131,132,133 Mechanical Blueprint Reading . . . . . CTID-101 Shop Mathematics CTIS-151,152
2	Automatic Screw Machine I . . . . . CTIS-134,135,136 Human Relations CBCE-101
3	Automatic Screw Machine II . . . . . CTIS-137,138,139 Electives (any three quarters)

Starting Classes for Mid Year

Winter	Spring	Summer
Mach. Lec. CTIS-201 Mach. Lab. CTIS-206 Math CTIS-157 B/P CTD-101	B/PCTID-101	Mach. Lec. CTIS-204 Mach. Lab. CTIS-209

Starting Classes for B Shift or Tricker

Fall	Winter
Mach. Shop Lec. CTIS-201 Mach. Shop Lab CTIS-206 (May come either AM or PM)	Math CTIS-157

Requirements
For the master of science in applied and mathematical statistics degree, the satisfactory completion of the following courses is required:

Two basic courses:
(These may be waived by the department chairperson upon evidence of equivalent learning, experience or competency.) CQAS-711 and 712 Fundamentals of Statistics I & II

Six core courses:
CQAS-742 Statistical Computing
CQAS-801 and 802 Design of Experiments I & II
CQAS-821 and 822 Theory of Statistics I & II
CQAS-841 Regression Analysis I

The core courses are expected to be completed early in a student's program. Upon completion of the core courses or after 30 hours of instruction, a written examination is required. After successful completion of the examination, the remainder of the program is prepared with the advice and counsel of the departmental advisor.

Four required career options courses: **A new** feature of the MS program is a logical grouping of core requirements, existing and new courses, which will allow the student to specialize within his or her career endeavors. The five specialized career options are:

Quality Control in Industry
CQAS-721 Statistical Quality Control I
CQAS-731 Statistical Quality Control II
CQAS-781 Quality Management
CQAS-782 Quality Engineering

Industrial Statistics
CQAS-761 Reliability
CQAS-783 Quality Engineering by Design
CQAS-856 Interpretation of Data
CQAS-875 Empirical Modeling

Administrative Applications of Quality Control
CQAS-781 Quality Management
CQAS-853 Managerial Decision Making
CQAS-873 Time Series Analysis
CQAS-881 Bayesian Statistics

Statistical Theory and Methods
CQAS-824 Probability Models
CQAS-830 Multivariate Statistics I
CQAS-831 Multivariate Statistics II
CQAS-842 Regression Analysis II

Quality Control in the Health Sciences
CQAS-721 Statistical Quality Control I
CQAS-791 Statistical ^Methods in Health Sciences
CQAS-792 Biological Assays
CQAS-851 Nonparametric Statistics

Each career option has four required courses. A departmental advisor will work with each student in identifying the appropriate career option and in developing a total program structured to achieve individual professional objectives.

Five electives may be taken from other courses listed under "Course Descriptions" in such areas as quality control, managerial decision making, multivariate analysis, sample surveys, reliability, and probability theory.

The total of 15 or 17 courses, each counting 3 quarter credits, comes to 45 or 51 credits depending on whether the basic courses (711-712) are waived. As indicated above, studies are normally completed in two to four years by attendance one or two nights a week.

Department of Career and Human Resource Development

Dr. Dorothy Paynter, Director

Human Resource Development Today
The field of human resource development continues to expand and gain stature as an independent field. Government, industrial, educational, and other organizations are recognizing that their future success depends on cultivating the potential of the people who work at all levels in the organization —not only in top positions, but also in entry-level and middle-level positions. Competent executives who are mapping their organizations' futures do not ignore the fact that their people are the single most important resource for ensuring future success.

These executives and their organizations are turning to individuals with the necessary skills and knowledge to assist in this important process. These individuals, identified by a variety of titles—trainers, counselors, internal and external consultants, personnel administrators, human resource planners—need very specific education, training and skills.

Graduates of RIT's program in Career and Human Resource Development meet this need.

The Program
The Career and Human Resource Development Program is a 52 quarter credit hour program with three major curriculum components: career development, organizational development, and human resource development. Students are required to take a theory course and a techniques course in each area. Two additional techniques courses are required. Students have the option of concentrating in a specific area through their choice of additional techniques courses and electives.

Many work environments are open to graduates of the program. Students focus on the environment of their choice—education, business, industry, public agencies—through their selection of projects, research topics and the setting of their internship.

Admissions Requirements
Admission requirements for the master of science degree include:

- Successful completion of the baccalaureate degree at an accredited college or university.
- A cumulative grade point average of 3.0 or above or evidence of relevant professional performance.
- Two letters of reference.
- A recent writing sample.
- An oral presentation.
- An interview with program faculty.

All credentials must be submitted and reviewed by the faculty prior to the completion of 12 quarter credit hours of graduate work in the program.

Application forms are available from the Office of Graduate Studies, RIT Admissions, or the department. Call 475-5062 for further information.

Financial Assistance
In addition to the assistance available through the RIT Financial Aid Office (716/475-2186) or the dean of Graduate Studies (716/475-6523), the department has scholarship and assistantship opportunities. The number and kind vary from year to year. For more information contact the CHRD Department (716/475-5062) for further information.

Degree Requirements

The degree requires the completion of a minimum of 52 quarter hours at the graduate level. Of the 52 hours, 24 are in nine courses required of all students. In addition, all students are required to complete 15 credits in techniques courses and 13 credits of electives. The degree can usually be completed in five consecutive quarters if the student starts in the Fall Quarter. However, the majority of students attend part time and take from two to four years to complete the degree work. Students must maintain a B average, and complete the degree within seven years from the first course taken and applied to the degree. Almost all courses are offered in the evenings, giving students the freedom to work during the day while they take courses.

Students are relatively free to choose the electives they feel best meet their needs. The only restrictions are: all courses must be graduate-level courses; a maximum of 12 quarter hours (not counted toward another degree) may be transferred from another college or university; a maximum of 12 hours may be taken outside the department of Career and Human Resource Development.

Upon matriculation, each student is assigned an academic advisor. At this time the student and advisor will develop a plan of study. For specific questions about courses and a plan of study, the advisor or department director should be consulted.

Required Courses	Credit Hours
Introduction to Career & Human Resource Development-CHRD-700	3
Assessment Methods in CHRD-CHRD-705	3
Statistical Concepts-CQAS-701	3
Theory of Organizational Development-CHRD-710	3
Theories of Career Development-CHRD-720	3
Theory of Human Resource Development-CHRD-730	3
Internship-CHRD-877*	6

*For students with appropriate professional experience special projects or additional course work may be substituted for the Internship. Departmental approval is required.

Organizational Development Techniques Courses

Futures Research & Simulation-CHRD-711	3
Planning & Evaluation in Organizational Development-CHRD-712	3
Practice of Consultation in Organizational Development-CHRD-713	3

Career Development Techniques Courses

Individual Career Counseling Techniques-CHRD-721	3
Career Counseling Techniques for Groups-CHRD-722	3
Information Use in Career Planning-CHRD-723	3

Human Resource Development Techniques Courses

Techniques of HRD-CHRD-731	3
Design & Delivery of Training-CHRD-732*	2
Needs Assessment & Problem Solving Techniques-CHRD-733	3

'CHRD-732 may be taken more than once.

Electives

Microcomputer Applications in CHRD-CHRD-750	3
Special Projects-CHRD-850	Variable
Special Topics-CHRD-891	3

Electives May Include:

Techniques courses not applied to degree requirements.

Electives

Microcomputer Applications in CHRD-CHRD-750	3
Special Projects-CHRD-850	Variable
Special Topics-CHRD-891	3

Electives May Include:

Techniques courses not applied to degree requirements.

Courses in other graduate-level programs at the Institute with permission of advisor.

Degree Requirements

24	Credits—Required Courses
15	Credits—Techniques Courses
13	Credits—Electives
52	Credits Total

College of Engineering

Richard A. Kenyon, Dean

The programs offered by the College of Engineering are planned to prepare students to fit into present-day industrial and community life and to lay a foundation for graduate work in specialized fields. This is accomplished by offering curricula that are strong in fundamentals, yet lead to specialization in the junior and senior years, and maintain a balance among humanistic-social subjects, the physical sciences, and professional courses.

Five-year programs
The college offers five five-year cooperative programs leading to the bachelor of science degree with majors in electrical, computer, industrial, mechanical and microelectronic engineering.

Resources
The departments of Electrical, Industrial and Mechanical Engineering maintain extensive laboratory facilities in the Gleason engineering building to provide for both undergraduate instruction and research by faculty and graduate students. The Department of Computer Engineering and the Microelectronic Engineering Program operate laboratories in the recently constructed Center for Microelectronic and Computer Engineering) a 57,000-square-foot laboratory structure containing over 10,000 square feet of clean room space for the fabrication of integrated circuits. The Institute's extensive computer facilities are augmented for students and faculty in the College of Engineering by the Gleason User Center, a four-station Calma computer for VLSI design and a new 16-station Intergraph system for computer-aided design (CAD), plus numerous small computers and personal computers in virtually all offices and most labs. Laboratory instruction is a vital part of the college's five undergraduate curricula, and the faculty pride themselves on having integrated both the computer and real-life laboratory work in the academic program. The College of Engineering laboratory experience helps prepare the engineering student for industrial work assignments while on co-op. The industry experience, in turn, strengthens the total academic program through exposing the student to the newest and most modern of industrial computers and equipment.

Cooperative education plan

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
5	A	RIT	CO-OP	RIT	-
	B	CO-OP	RIT	RIT	-

The cooperative plan
Students in the five-year cooperative programs attend classes during the Fall, Winter, and Spring quarters of their first and second years. Prior to the beginning of the third year, students are assigned to A and B blocks. In any given quarter, students in one block obtain cooperative employment while those in the other block attend classes. Employment arrangements are made by each student through their co-op coordinator in the Center for Cooperative Education and Career Services. The chart illustrates the cooperative program as offered by the College of Engineering.

Academic advising
Each student is assigned an advisor upon entry into the College of Engineering. This person is available to the student for career counseling as well as academic advising.

Transfer programs
The College of Engineering at RIT has for many years admitted graduates from two-year engineering science programs at community colleges and technical institutes. The rapid integration of these transfer students into the baccalaureate programs in significant numbers has provided an added dimension and a uniqueness to the College of Engineering.

In many cases, accepted graduates of the two-year engineering science programs are able to enter the regular third year program in RIT's five engineering programs.

For those students who have completed programs in electrical or electronics technology with a high scholastic average, it is possible to develop a program of eight or nine academic quarters leading to a bachelor of science degree in electrical engineering.

Orientation
The engineering programs are strongly oriented toward mathematics and the physical sciences. Emphasis is placed upon the study of these subjects in the first two years to provide a foundation for the applied sciences and for the engineering subjects which are scheduled later in the programs.

Careers
Graduates qualify for professional work in design and development of equipment and systems, research and experimental work, supervision of technical projects and managerial positions in industry. Increasing numbers of graduates continue their education for the master of science or the doctor of philosophy degrees.

Entrance requirements (BS)
Applicants for the engineering programs must be high school graduates, and must have completed elementary and intermediate algebra, plane geometry, trigonometry, and both physics and chemistry while in high school. Advanced algebra, solid geometry, and calculus, while not required, are highly desirable. The applicant's proficiency in the required entrance subjects should be high since these provide a good index of his or her ability to cope with the more advanced courses in the science programs.

All applicants are required to take entrance examinations as described in the general section of this bulletin.

Graduation requirements
The minimum requirements for the bachelor of science degree in the College of Engineering are:

1. Successful completion of all required and elective courses of the program, including the co-op requirement.

2. A program cumulative grade point average of at least 2.0 (the number of quality points must be equal to at least twice the number of quarter credit hours required)

3. A principal field grade point average of at least 2.0 as defined for the specific discipline.

Prospective students should consult the individual program descriptions for cooperative employment requirements and for additional information.

Accreditation
The programs of study leading to the bachelor of science degree in computer engineering, electrical engineering, industrial engineering, mechanical engineering and microelectronic engineering are accredited by the Accreditation Board for Engineering and Technology (ABET). The college is a member institution of the American Society for Engineering Education. All graduating seniors are eligible, and encouraged, to sit for the Intern Engineer portion of the New York State Professional Engineering examination during their final quarter in school.

Part-time students
An increasing number of students desire to pursue their engineering degree on a part-time basis while maintaining full-time employment in industry. In response to the needs of such students the College of Engineering has expanded its scheduling of classes in the upper division of the electrical engineering program so that these courses may be taken during the late afternoon and early evening as well as during the day. Students wishing to pursue part-time studies must qualify for matriculation as regular third-year engineering students through normal admission procedures. As with full-time students, part-time students are required to complete the equivalent of five quarters of approved cooperative work experience. Arrangements are made for part-time students to utilize approved portions of their regular employment to satisfy the co-op requirements. Persons wishing further information on part-time studies in electrical engineering should contact the department head.

Graduate degrees
Programs leading to the master of science degree are offered in the computer engineering, electrical engineering and mechanical engineering departments. The programs may be pursued on a part-time or full-time basis since the majority of courses are offered in the late afternoon and early evening.

In addition, the College of Engineering offers a post-baccalaureate professional program leading to the master of engineering degree. The degree is without discipline designation, and study may be pursued in such areas as electrical engineering, manufacturing engineering, industrial engineering, computer engineering, mechanical engineering, engineering management, microelectronic manufacturing engineering and systems engineering. The program is unique in that it extends the undergraduate cooperative concept to the graduate level in an industrial internship for which academic credit is granted.

Designed as a full-time program, the master of engineering degree may also be pursued on a part-time basis by engineers employed in local industry.

The College of Engineering offers jointly with the College of Science a program leading to the master of science degree in materials science and engineering.

For further information on graduate programs in the College of Engineering, request the Graduate Bulletin or contact the chairman of the Graduate Committee, College of Engineering.

Course descriptions
For a complete outline of courses offered at RIT, please request the Course Description Catalog from the Admissions Office.

Admission at a Glance: College of Engineering Programs

General information on RIT's admission requirements, procedures and services is included in detail on pages 153-154 of this bulletin.

Five-year cooperative programs leading to the BS degree are offered including majors in computer, electrical, industrial, mechanical and microelectronic engineering.

The programs prepare students for employment in the modern industrial world. There are extensive laboratory and experimental facilities available for student use. The programs in computer, electrical, industrial, mechanical and microelectronic engineering are accredited by the Accreditation Board for Engineering and Technology.

Electrical Engineering—Students first develop proficiency in mathematics, science, and engineering fundamentals. Fundamental electrical studies include electromagnetics, energy conversion, circuit theory, and electronics. Degree granted: BS-5 year.

Computer Engineering—This program builds upon a blend of computer science and electrical engineering and is designed to enable the graduates to intelligently incorporate computers within engineering products and processes. Degree granted: BS-5 year.

Freshman Admissions Requirements **Transfer Admission with advanced standing**

Program	Required High School Subjects*	Desirable Elective Subjects	Two-Year College Programs
Electrical Engineering	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics and Chemistry	additional mathematics	Engineering Science (liberal arts with math/science option considered on individual basis) or Electrical Technology (A.A.S. Degree)
Computer Engineering	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics and Chemistry	additional mathematics	Engineering Science (liberal arts with math/science option considered on individual basis)
Industrial Engineering	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics and Chemistry	additional mathematics	Engineering Science (liberal arts with math/science option considered on individual basis)
Mechanical Engineering	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics and Chemistry	additional mathematics	Engineering Science (liberal arts with math/science option considered on individual basis)
Microelectronic Engineering	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics and Chemistry	additional mathematics	Engineering Science (liberal arts with math/science option considered on individual basis)

'Fouryears of English are required in all programs, except where state requirements differ.
A substantial number of professional and free electives are also available.

Mechanical Engineering—Students devote the first two years to the study of mathematics, physics, chemistry, and mechanics. By appropriately selecting courses from Group I and II categories, a student can concentrate in the applied mechanics area or in the thermal fluid sciences area. Degree granted: BS-5 year.

Microelectronic Engineering—This interdisciplinary engineering curriculum combines elements of electrical engineering with chemistry, physics, imaging science and mathematics to provide an emphasis on manufacturing or process engineering as it relates to the design and fabrication of integrated circuits. Degree granted: BS-5 year.

Industrial Engineering—Students learn design improvement and installation of integrated systems of people, materials, and equipment. Students also develop specialized knowledge in mathematics and physical science with methods of engineering and design. Degree granted: BS-5 year.

Computer Engineering

Roy S. Czernikowski, Head

The computer engineering program focuses on the design and development of computer systems and computer-integrated systems with due consideration to such engineering factors as function, performance, cost, reliability and maintainability. The goal of the computer engineer is to build computer systems or computer-integrated systems to meet application requirements with attention to the hardware/software interaction and all the aspects just mentioned.

The program prepares graduates to design and implement various engineering products with embedded computers and to undertake graduate study where sophisticated computer system design can be addressed.

The program strives to interweave and span the topics from formal specifications to heuristic algorithm development, from system architecture to computer design, from interface electronics to real-time applications, and from interprocess communications management to VLSI implementation.

As an engineering discipline, this program emphasizes the careful adoption of design methodology and the application of sophisticated engineering tools. The intensive laboratory requirements ensure the graduate of significant experience with modern facilities and up-to-date design tools.

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

Principal field of study

For students matriculated in the interdisciplinary computer engineering program, the principal field of study is defined to be all courses taken in the College of Engineering and the School of Computer Science and Technology. Matriculated students not maintaining a 2.0 cumulative grade point average in their principal field of study are subject to academic probation and suspension according to Institute policy.

Yr.	BS DEGREE IN COMPUTER ENGINEERING	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	EECC-200 Introduction to Computer Engineering	1		
	ICSP-241 Programming I Algorithmic Structures	4		
	ICSP-242 Programming 11 Data Structures		4	
	ICSP-305 Assembly Language Programming			4
	SCHG-208 College Chemistry I	4		
	SMAM-251,252,253 Calculus I, II, III	4	4	4 ,
	SMAM-305 Calculus IV			4
	SPSP-311,312 University Physics I, II		4	**4**
	SPSP-375,376 University Physics Lab I, II		**1**	**1**
	"Liberal Arts	4	4	
	tPhysical Education	**0**	**0**	**0**
2	EECC-341 Intro, to Digital Systems for Computer Engineers . . .		**4**	
	EEEE-351 Circuit Analysis I			4
	EMEM-335 Elements of Statics		2	
	EMEM-349 Elements of Dynamics			3
	ICSP-243 Programming III Design & Implementation	4		
	ICSP-325 Data Organization & Management		4	
	ICSP-319 Scientific Applications Programming			4
	SMAM-265 Foundations of Discrete Math		4	
	SMAM-306 Differential Equations	4		
	SMAM-351 Probability			4
	SPSP-313 University Physics III	4		
	SPSP-377 University Physics Lab III	1		
	SPSP-314 Modern Physics		4	
	"Liberal Arts	4		
	tPhysical Education	**0**	**0**	**0**
		FALL WTR.		**SPG. SMR.**
3	EECC-452 Linear Control Systems			4
	EEEE-352 Circuit Analysis II	4		
	EEEE-441,442 Electronics I, II	4		4
	ICSS-440 Operating Systems	4		
	ICSS-515 Analysis of Algorithms			4
	"Liberal Arts	4		4
4	EECC-550 Computer Organization			4
	EECC-553 Digital Control Systems Design	4		
	EECC-560 Interface & Digital Electronics	4		
	EECC-561 Digital Systems Design for Computer Engineers			4
	EECC-630 Intro, to VLSI Design			4
	ICSP-450 Programming Language Concepts	4		
	"Liberal Arts	4		4
5	EECC-551 Computer Architecture	4		
	EECC-655 Projects in Computer Engineering	4		
	EECC-694 Data & Computer Communications			4
	"Professional Elective	4		4
				4
		4		4
	"Liberal Arts			**2**

'Professional electives must have a 25% engineering design component.
"See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Electrical Engineering

S. **Madhu,** Head

The cooperative five-year engineering program

The role of an engineer has been defined as "applying the laws of mathematics and principles of science to the solution of practical problems." The curriculum of the BS degree program in electrical engineering at RIT has been planned with this definition in mind.

In today's world, a tremendous diversity of interest and wide variety of talents and skills are expected of an electrical engineer by industry and graduate schools. As a consequence, the electrical engineering curriculum not only provides a basic foundation in the fundamental areas of electrical engineering, but also permits each student to pursue one or more specific areas of interest by selecting professional electives in a variety of different fields. The curriculum is flexible to allow a student's individual program to range from a high degree of specialization in one area to a broad general coverage of engineering and science.

The philosophy of the faculty of the Department of Electrical Engineering stresses the use of the laboratory in strengthening a student's knowledge of the subject. The curriculum includes a large number of courses in which the laboratory is an integral part. There is a continual effort on the part of the faculty to keep the laboratory equipment and experience as up to date as possible.

Since the ability to design is an important part of the training of an engineer, the student is presented with challenging problems of design in a number of courses. In addition, each student entering the program in May 1986 or later is required to complete a design elective course (to be chosen as one of the professional electives in the fifth year).

The co-op requirement of the curriculum enhances student knowledge acquired in the classroom and the laboratory. The exposure and experience gained by the student in industry make the student keenly aware of the constraints imposed by the "real world" on the solution of engineering problems.

Yr.	BS DEGREE IN ELECTRICAL ENGINEERING-CLASS OF 1993	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	EEEE-200 Elec. Eng. Graphics	1		
	EEEE-240 Intro, to Digital Systems			3
	SCHG-208,209 College Chemistry I, II	4		4
	SMAM-251,252,253 Calculus I, II, III	4	4	4
	SPSP-311,312 University Physics I, II		4	4
	SPSP-375,376 Univ. Phys. Lab. I, II		1	1
	ICSA-220 Fortran Prog, for Engineers		4	
	"Liberal Arts (Core)	8	4	
	$Physical Education Elective	0	0	0
2	EEEE-351 Circuit Analysis I			4
	EMEM-331 Mechanics I	4		
	EMEM-349 Elements of Dynamics			3
	EEEE-365 Introduction to Microcomputers		4	
	SMAM-305 Calculus IV	4		
	SMAM-306 Differential Equations		4	
	SMAM-328 Engineering Mathematics			4
	SPSP-313 University Physics III	4		
	SPSP-377 University Physics III Lab	1		
	SPSP-314 Modern Physics I		4	
	SPSP-315 Intro, to Semiconductor Physics			4
	EEEE-310 Numerical Methods..			2
	"Liberal Arts (Core)	4	4	
	IPhysical Education Elective	0	0	0
		FALL WTR.		SPG. SMR.
3	EEEE-352 Circuit Analysis II	4		
	EEEE-453 Linear Systems I			4
	EEEE-441,442 Electronics I, II	4		4
	EEEE-471 Electromagnetic Fields I			4
	SMAM-351 Probability			4
	SMAM-420 Complex Variables	4		
	"Liberal Arts (Core)	4		
4	EEEE-554LinearSystemsII	4		
	EEEE-544 Physics of Electronic Devices	4		
	EEEE-531 Electromechanical Energy Conversion	4		
	EEEE-472 Electromagnetic Fields II	4		
	EEEE-513 Intro, to Automatic Controls			4
	EEEE-534 Intro, to Communication Systems			4
	EEEE-545 Digital Electronics			4
	"Liberal Arts (Concentration)			4
	EMEM-431 Thermodynamics	4		
	'Professional Elective	4		4
	•Professional Elective	4		4
	Free Elective			4
	"Liberal Arts (Concentration)	4		4
	"Liberal Arts (Senior Seminar)			2

'One of the professional electives must be a design elective.
'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

The co-op experience also permits each student to decide which career path would be most challenging and rewarding in his or her case. The co-op requirement results in the production of a mature graduate with well-developed academic and industrial perspectives.

In modern society, engineering decisions are rarely made without considering the ethical and socio-economic impact on society. The ability to communicate clearly and effectively with others also is an indispensable tool for the engineer. A significant portion of the curriculum is devoted to the study of liberal arts throughout the five years of the program. These courses are aimed at making students more sensitive to the factors that normally surround any decision-making situation, improving their ability to communicate with others, and making their professional life more meaningful and rewarding.

The first two years of the curriculum are devoted to the mastery of the laws of mathematics and principles of science essential to the study of electrical engineering subjects. Some technical courses directly involving electrical engineering principles also are offered in the first two years in order to motivate the student in electrical engineering. The third and fourth years build upon the basic foundation laid in the first two years by focusing on the subjects that form the core of electrical engineering. Courses in circuits, electronics, linear systems, electromagnetic fields, physics of semiconductor devices, communication systems, control systems, and energy conversion are taught in these two years. The fifth and final year allows the student to specialize in an area of his or her professional interests. The professional electives may be taken from courses offered by the Department of Electrical Engineering, the other departments in the College of Engineering, or the College of Science, subject to the approval of the student's faculty advisor.

Transfer programs
The Department of Electrical Engineering actively seeks transfer students who have successfully completed an associate degree program. Those holding an associate degree in engineering science, as well as those holding an associate degree in applied science are accepted into the program, provided they meet the admission requirements in effect at the time of their application.

Transfer credits are awarded only on a course-by-course basis to all transfer students. All students are expected to complete the same course requirements as those entering the BS degree program as freshmen, either by actually completing the specific courses or by receiving transfer credits.

Transfers from two-year engineering science
Graduates of the AS degree in engineering science program are usually in step with the third-year student in electrical engineering at RIT except for the following three courses: EEEE 240, Introduction to Digital Systems (3 credits); EEEE 310, Numerical Methods (2 credits); and EEEE 365, Introduction to Microcomputers (4 credits).

Transfer from two-year electrical or electronic technology
Graduates with an AAS degree in electrical or electronic technology usually require eight academic quarters of courses in addition to the five quarters of co-op in industry. The program to be followed will vary significantly from one student to another since there is a significant variation in the two-year technology programs offered by different community colleges.

Extended day schedule (for part-time evening students)
In order to permit a person working full time in industry to earn a BS degree in electrical engineering (accredited by the Accreditation Board of Engineering and Technology), courses also are scheduled in the late afternoons and evenings. These courses are offered and taught by the faculty of the Department of Electrical Engineering and meet the same standards as those taught during the normal daytime hours. Students entering these programs must have an AS in engineering science and be employed full time in a technical position. Applicants to the extended day schedule will be evaluated in the same manner as those transferring to the full-time day schedule of the program. A student must plan to take two courses in each academic quarter. A typical schedule of courses for the extended day student is shown in the adjoining table. Variations will be necessary in individual cases depending on the transfer credits awarded at the time of entering the program.

Industrial Engineering

Richard Reeve, Head

Industrial engineering differs from other branches of the engineering profession in at least two ways. First, industrial engineering education is relevant to most types of industry and commercial activity. Second, it is that major branch of engineering concerned not only with machines, but with people as well.

Specifically, industrial engineering is concerned with the design, improvement, and installation of integrated systems of people, materials, and equipment. It draws upon specialized knowledge and skill in the mathematical and physical sciences, together with the principles and methods of engineering analysis and design.

The industrial engineering curriculum covers the principal concepts of human performance, mathematical modeling, computer programming and applications, management systems, and manufacturing processes.

The curriculum stresses the application of computers in solving the engineering problems of today. For example:

1. The undergraduate industrial engineer at RIT utilizes computer graphics in designing the layout of manufacturing plants and in the development of dynamic, animated computer simulation models.
2. The industrial engineer utilizes computers to control flexible manufacturing systems involving robots, machines, and conveyors.
3. Industrial engineers at RIT utilize the computer in conjunction with touch-sensitive devices, voice recognition systems, and robots in the analysis and design of man/machine systems.

Through the use of professional and free electives the industrial engineering student can build a strong concentration of courses in manufacturing engineering. A student within the department of industrial and manufacturing may build a concentration of manufacturing expertise involving robotics, automation, design for manufacturing, NC programming, safety, and other related areas. In addition, there are other program concentrations that would enable the industrial engineering student to build a minor concentration of study in mechanical engineering, electrical engineering, or computer science.

Careers

Some of the activities of industrial engineers include work measurement, operations research, applied statistics, human factors, plant layout, materials handling, production planning and control, manufacturing, and management consulting.

Balance rather than specialization has allowed our graduates to pursue varied paths. Examples of the diversity, along with the role that an industrial engineer might function within, are reflected through the following partial listing of industrial engineering co-op assignments.

1. Hospitals
   a. improve efficiency of a patient therapy department
   b. optimal patient scheduling for physicians
   c. establishment of outpatient clinic staffing levels
2. Manufacturing industries
   a. product life studies
   b. layout of new and existing work areas
   c. design and implementation of an information system
   d. investigation of production processes involved in cleaning carbide dies
   e. economic investigation—new versus repaired breakdown analysis
   f. investigation of waiting lines in connection with a product line
   g. investigation of delivery service which involved scheduling, route modification and material handling
   h. assisted in setting up a production control monitoring board
   i. computer programming relating to pricing policies, blending problems, and truck scheduling
   j. downtime studies of various operations using time study and work sampling
   k. development and computerization of a forecasting model

Transfer programs

Transfer programs for industrial engineering students are arranged on an individual basis. This allows a student to build an industrial engineering program which best takes into account his or her previous education and work experience. Students completing an AS in engineering science normally receive credit for the first two years and start their program at RIT with the third-year class.

Yr.	BS DEGREE IN INDUSTRIAL ENGINEERING	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	EIEI-201 Introduction to Industrial Engineering	4		
	EIEI-202 Computing for Industrial Engineers		4	
	SCHG-208,209 College Chemistry I, II	4		4
	SMAM-251,252,253 Calculus I, II, III	4	4	4
	SPSP-311,312 University Physics I, II		4	4
	SPSP-375,376 University Physics Lab I, II		1	1
	"Liberal Arts (Core)	4	4	4
	tPhysical Education Elective	0	0	0
2	EMEM-331 Mechanics I	4		
	EMEM-332 Mechanics II			4
	SMAM-305 Calculus IV	4		
	SMAM-306 Differential Equations		4	
	SMAM-328 Engineering Mathematics			4
	SPSP-313 University Physics III	4		
	SPSP-377 University Physics Lab III	1		
	EMEM-343 Materials Processing		4	
	EMEM-344 Materials Science			4
	EIEI-301 Computer Tools for Increased Productivity		2	
	Science Elective		4	
	"Liberal Arts (Core)	4	4	4
	tPhysical Education Elective	0	0	0
		FALL WTR.		SPG. SMR.
3	EIEI-420 Work Measurement & Analysis I	4		
	EIEI-520 Engineering Economics	4		
	EIEI-401 Introduction to Operations Research I	4		
	SMAM-351 Probability	4		
	SMAM-352 Applied Statistics I			4
	EIEI-415 Human Factors			4
	EIEI-481 Management Theory & Practice			4
	EIEI-422 Systems & Facilities Planning			4
4	EIEI-510,511 Applied Statistics I, II	4		4
	EIEI-402 Introduction to Operations Research II	4		
	EIEI-503 Simulation	4		
	EIEI-516 Human Factors II	4		
	EIEI-630 Computer Aided Manufacturing			4
	EIEI-530 Engineering Design			4
	"Liberal Arts (Concentration)			4
5	EIEI-560 Project Design			4
	"Professional Elective	8		8
	"Liberal Arts (Concentration)	4		4
	Free Elective	3		
	"Liberal Arts (Senior Seminar)			2

'At least one professional elective selected from the following courses: EMEM-431 Thermodynamics: EMEM-415 Fluid Mechanics I; EEEE-461,462 Electrical Engineering I, II.

'Seepage 118 for Liberal Arts requirements.

f See *page 176 for policy on Physical Education.*

Mechanical Engineering

Bhalchandra V. Karlekar, Head

Mechanical engineering is perhaps the most comprehensive of the engineering disciplines, and the mechanical engineer's interests encompass the design of such diverse systems as missiles, power plants, robots, and machine tools. 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 in the areas ol production and economics, mechanical engineers are often called upon to assume management positions.

The first two years of the undergraduate program are devoted to an intensive study of mathematics, physics, chemistry, mechanics, and the Fortran language—the basic tools of the engineer—and to a thorough grounding in the humanities. The final three years of the program integrate the cooperative work experience with the professional subject matter of the mechanical engineering discipline.

In the third year and the first half of the fourth year the mechanical engineering student continues to study the fundamentals of thermal-fluid sciences and solid-body mechanics. In the second half of the fourth year and the fifth year he or she obtains considerable background in design. This is accomplished with two sets of courses—Group I and Group II. Each student takes at least three courses from Group I and at least two from Group II. Two credit hours of each Group I course are devoted to design. Group II courses are entirely dedicated to design. In consultation with his or her academic advisor, each student also selects three elective courses. These may be other undergraduate or graduate courses in mechanical engineering or courses offered by other colleges within RIT. By appropriate selection of Group I, Group II, and elective courses, a student may tailor his or her program to a specific area of interest such as solid-body mechanics or thermal-fluid systems.

Yr.	BS DEGREE IN MECHANICAL ENGINEERING	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SMAM-251,252,253 Calculus I, II, III	4	4	4
	SCHG-208,209 College Chemistry I, II	4		4
	EMEM-343 Materials Processing	4		
	SPSP-311,312 University Physics I, II		4	4
	SPSP-375,376 University Physics Lab I, II		1	1
	EMEM-210 Intro, to Graphics		3	
	EMEM-341 Fortran			3
	'Liberal Arts (Core).	4	4	
	tPhysical Education Elective	0	0	0
2	SMAM-305 Calculus IV	4		
	SMAM-306 Differential Equations		4	
	SMAM-318 Matrices and Boundary Value Problems			4
	SPSP-313 University Physics III	4		
	SPSP-377 University Physics Lab III	1		
	EMEM-336 Statics	4		
	EMEM-347 Engineering Mechanics		4	
	EMEM-348 Engineering Mechanics Lab I		1	
	EMEM-344 Materials Science		4	
	EMEM-311 Computer-Aided Design			3
	EEEE-364 Microprocessors			4
	"Liberal Arts (Core)	4	4	4
	$Physical Education Elective	0	0	0
		FALL WTR.		SPG. SMR.
3	EMEM-437 Machine Design	4		
	EMEM-440 Numerical Methods	4		
	EMEM-413Thermodynamics	4		
	Science Elective	4		
	EMEM-415 Fluid Mechanics			4
	EMEM-416 Thermal Fluid Sci. & Energy Lab I			1
	EMEM-439 Dynamics			4
	EMEM-464 Design for Manufacturing			4
	"Liberal Arts (Core)			4
4	EMEM-514 Heat Transfer	4		
	EMEM-543 Response of Dynamic Systems	4		
	EMEM-545 Dynamics Lab	1		
	Science-Elective	4		
	EMEM-550Transport Phenomenon			4
	EMEM-551 Thermal Fluid Sci. & Energy Lab II			1
	Technical Elective			4
	EMEM-518 Finite Elements			4
	"Liberal Arts (Concentration)	4		4
		FALL WTR.		SPG.
5	EMEM-630 Senior Design Project I	4		
	EMEM-631 Senior Design Project II			4
	Technical Elective	4		4
		4		4
	"Liberal Arts (Concentration)	4		
	"Liberal Arts Senior Seminar			2

'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

The writing policy of the Mechanical Engineering Department requires that during the third year, all mechanical engineering students take the Test of Standard Written English (TSWE). Those receiving a scaled score of 50 or above will be certified as having satisfied the program's writing competency requirements. Those receiving a scaled score below 50 must take and pass the College of Liberal Arts course, College Writing I (0502-301), in order to satisfy competency requirements. This course is defined as an overload.

The Mechanical Engineering Department is staffed to offer professional courses in the areas of thermal systems, applied mechanics, manufacturing, materials science, environmental science, systems analysis, computer-aided graphics and design, and robotics. The laboratories of the department are equipped to provide extensive experimentation in these areas, and students are encouraged to pursue independent research in addition to that required in their programs. The department has Tektronix and Hewlett-Packard computer graphics systems.

Computing services
Information Systems and Computing provides computing services on VAX/VMS and VAX/ULTRIX (UNIX) systems, and various microcomputers to students regardless of their majors. These services are provided at no cost to students. Central computer systems can be accessed via telephone or terminals in five different User Computing Centers. Publications and free seminars are available. Many RIT colleges also have computing facilities available to students in their programs.

Transfer programs
The Mechanical Engineering Department at RIT has a long-standing tradition of admitting graduates from two-year community college programs in engineering science and in engineering technology. The addition of significant numbers of transfer students to our regular undergraduate students provides RIT's engineering program with a unique academic atmosphere.

The AS graduate in engineering science with above average scholastic achievement can generally anticipate entering the BS program in mechanical engineering as a regular third-year student. It may be necessary to adjust a few courses in our program to accommodate differences in the programs of preparation in the first two years, since transfer credits are granted on the basis of a course-by-course evaluation.

The AAS graduate in mechanical technology who has demonstrated outstanding achievement should seriously consider transfer to a BS program in mechanical engineering as one alternative for continuing formal education. The exact number of transfer credits that he or she may qualify for varies widely, and therefore the student should contact the department head.

Combined five-year BS/MS degree sequence
In addition to the bachelor of science and master of science degree programs described under the section entitled "College of Engineering," a combined BS/MS degree sequence is also available for the mechanical engineering student. A student enrolled in this sequence is required to successfully complete a minimum of 230 quarter credit hours. After completing this requirement the student is awarded the BS and MS degrees simultaneously. Admission into the sequence is based on the student's cumulative grade point average, which must be at least 3.0, letter of recommendation from the faculty, and a personal interview by a departmental committee. All students in the sequence are required to maintain a cumulative grade point average of at least 3.0. Further information regarding this sequence can be obtained from Professor Charles Haines, (716) 475-2029, in the Department of Mechanical Engineering or from the department office, (716)475-2163.

A transfer student who has completed one quarter at RIT and who has achieved a cumulative grade point average of at least 3.0 may apply for admission into the five-year combined BS/MS degree sequence.

Course descriptions
For a complete outline of courses offered at RIT, please request the Course Description Catalog from the Admissions Office.

Group I Courses
EMEM-605 Applications in Fluid Mechanics
EMEM-615 Robotics
EMEM-618 Computer-Aided Engineering
EMEM-635 Heat Transfer II
EMEM-652 Fluid Mechanics of Turbomachinery
EMEM-658 Engineering Vibration
EMEM-660 Refrigeration and Air Conditioning
EMEM-672 Dynamics of Machinery
EMEM-694 Stress Analysis

Group II Courses
EMEM-608 Thermo-Fluids Design and Management Principles
EMEM-610 Thermo-Fluids Project Design and Analysis
EMEM-620 Introduction to Optimal Design
EMEM-625 Creative Design of Mechanical Devices and Assemblies
EMEM-632 Advanced Mechanical Systems Design
EMEM-665 Thermal Fluid Design

Elective Courses
EMEM-637 Laser Engineering
EMEM-643 Control Systems
EMEM-650 Gas Dynamics
EMEM-651 Viscous Flows
EMEM-669 Introduction to Water Pollution
EMEM-680 Advanced Thermodynamics
EMEM-685 Advanced Strength of Materials
EMEM-687 Engineering Economy
EMEM-690 Environment and the Engineer
EMEM-692 Analysis for Engineers

Graduate Courses
Courses from other colleges

Microelectronic Engineering

Lynn Fuller, Director

The College of Engineering is proud to offer an undergraduate degree program in-microelectronic engineering. This program is the only one of its type in the United States that leads to the bachelor of science degree in microelectronic engineering. Offered in conjunction with the College of Graphic Arts and Photography and the College of Science, the ABET accredited five-year program emphasizes all aspects of microelectronic engineering. It provides the broad disciplinary background in optics, chemistry, device physics, computer science, electrical engineering, photographic science, and statistics necessary for entry into the microelectronic industry,

j Students participate in the required co-op portion of the program after completion of their second year of school. Microelectronic engineering co-op students work for all of the major manufacturers of integrated circuits across the United States. Upon completion of the program the student will be well-prepared to enter the industry immediately or go on to advanced work in graduate school.

Students in the program will have hands-on experience in the design and processing of integrated circuits, the vital component in almost every advanced electronic product manufactured today. The undergraduate laboratories at RIT for microelectronic engineering are among the best in the nation.

As the nationwide shortage of microelectronic engineers continues to grow, RIT graduates will provide a valuable resource to the microelectronic industry in the United States. For the student, this program offers an unparalleled opportunity to prepare for professional challenge and success in one of the leading areas of engineering of our time.

Yr.	BS DEGREE IN MICROELECTRONIC ENGINEERING	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	EMCR-201 Intro, to Microelectronics	4		
	SCHG-211,212 Chemical Principles I, II	3	3	
	SCHG-205,206 Chem. Principles I, II Lab	1	1	
	SMAM-251,252,253 Calculus I, II, III	4	4	4
	SPSP-311,312 Univ. Phys. I, II		4	4
	SPSP-375,376 Phys. Lab I		1	1
	PIMG-221 Imaging Science for Microelect			4
	"Liberal Arts (Core)	4	4	4
	tPhysical Education Elective	0	0	0
2	EEEE-351 Circuit Analysis I			4
	EEEE-364 Microprocessors		4	
	EMCR-3501.C. Technology			4
	ICSA-220 Fortran	4		
	SMAM-305 Calculus IV	4		
	SMAM-306 Differential Equations		4	
	SMAM-328 Engineering Mathematics			4
	SMAM-314 Statistics		4	
	SPSP-313 University Physics III	4		
	SPSP-377 Physics Lab. III	1		
	SPSP-314 Modern Physics		4	
	SPSP-315 Intro. Semi. Phys			4
	"Liberal Arts (Core)	4		
	tPhysical Education Elective	0	0	0
		FALL WTR.		SPG. SMR.
3	EEEE-352 Circuit Analysis II	4		
	EEEE-441,442 Electronics I, II	4		4
	EEEE-455 Linear Systems			4
	EMCR-530,540 EM Fields I, II	4		4
	PIMG-541 Fundamentals of Optics			4
	"Liberal Arts (Core)	4		
4	EMCR-520 VLSI Design			4
	EMCR-560 Device Physics	4		
	EMCR-573 Microlithography I Lab			1
	EMCR-640 Microelectronics			4
	PIMG-543 Optical Engineering	4		
	PIMG-561 Microelectronic Chem. I	4		
	PIMG-563 Microlithography I			3
	Liberal Arts (1 Core, 1 Concentration)	4		4
5	EMCR-575 Microlithography II Lab	1		
	EMCR-630 Advanced Micro. Chem	4		
	EMCR-6501.C. Processing Lab	4		
	EMCR-660 Seminar/Research			4
	EMCR-670 Advanced Microlithography			4
	PIMG-565 Microlithography II	3		
	"Liberal Arts (Concentration)	4		4
	"Liberal Arts (Senior Seminar)			2
	Professional Elective			4

'See page 118 for Liberal Arts requirements.
‡See page 176 for policy on Physical Education.

College of Fine and Applied Arts

Robert H. Johnston, Dean

The College of Fine and Applied Arts offers programs in the arts and crafts through curricula in the School of Art and Design and the School for American Craftsmen. Concentrations, or majors, in the School of Art and Design are given in graphic design, industrial and interior design, painting, packaging design, printmaking, painting-illustration, printmaking-illustration, and medical illustration. In the School for American Craftsmen concentrations are given in ceramics and ceramic sculpture, glass, metalcrafts and jewelry, weaving and textile design and woodworking and furniture design.

The studies in the two schools of the college express a common educational ideal; the conviction that technical competence provides the most satisfactory foundation for the expression of creative invention. However, the mastery of techniques is seen as a means, not an end; the end of education in the arts is the exercise of creative imagination.

Resources
The equipment and the studios of the School of Art and Design are superior. A comprehensive art library of source material and an outstanding collection of slides are available for reference; and instructional films and other visual aids are utilized. Exhibitions, held in the Bevier Gallery, feature the work of contemporary painters, designers, and graphic artists, as well as work by faculty and students. Exhibition space in the Bevier Gallery extends the classroom into the public arena. In this gallery the focus is to bring attention to excellence in ideas, concepts, and aesthetic endeavors through the arts, crafts, and design expressions. Openings are planned for students to meet the artists. The Student Honors Show hangs through the summer and the opening of classes in September. Professional designers, painters, photographers, and graphic arts personalities are invited to lecture and give demonstrations. Rochester industry and commerce often sponsor pilot programs which are carried on under faculty supervision.

An added resource is the community of Rochester itself, with its many opportunities for educational, cultural, and social enrichment. Exhibitions, programs in the performing arts, and lectures are available to provide extracurricular learning for the interested student.

The resources of the School for American Craftsmen available for the student are exceptional; excellent equipment and facilities and a unique and challenging program combine learning and doing.

The faculty in the College of Fine and Applied Arts are productive in the fields in which they teach, and the honors and prizes they have won are a reflection of the prestige they enjoy as artists, designers and craftspeople. They have been broadly educated in the United States, and are well acquainted with contemporary practice in their art, design or craft. While the teaching staff is composed of professionals able to practice their discipline with distinction, they are, as well, interested and sympathetic teachers and counselors.

The Computer Centers, available for student use, are equipped with Apple, IBM, Artronics, Autographies, Digital and Genigraphics terminals. Photo darkrooms also support the assigned problems. The Craft Village provides additional support for blacksmithing, sculpture, glassblowing and ceramic firing needs.

The Wallace Memorial Library is particularly strong in the extensive list of contemporary periodicals in design, arts and crafts available for study and research.

The hearing-impaired student receives assistance through the educational support team within the college.

Cooperative education
Recognizing the importance of cooperative education to the overall academic program, the college has initiated an optional summer co-op for sophomores and juniors. Co-op experience provides firsthand knowledge of the forces influencing the fields of art, design and craft, and allows the practice of new skills in work settings. It also gives students an opportunity to earn an income to help meet educational costs. The student is responsible for finding the co-op job and for performing productively. Co-op students evaluate career goals before making employment decisions, gain professional experience for their resumes and enhance quality placement after graduation. As an option, a co-op experience usually follows the sophomore and junior years, the student being gainfully employed during the two summers.

Accreditation
The programs of study offered in the College of Fine and Applied Arts are fully accredited: courses of study have been approved by the New York State Department of Education, the Middle States Association of Colleges and Secondary Schools, and the National Association of Schools of Art and Design.

Plan of education
The programs in the College of Fine and Applied Arts are two and four years in length and lead to the associate in applied science and the bachelor of fine arts degrees. The packaging design program is four years and leads to the bachelor of science degree. Students attend school for three quarters, each eleven weeks in length, during the school year. Advanced study at the graduate level is offered leading to the master of fine arts and the master of science for teachers degrees. The former may be earned normally in two years, the latter in one. The MST may be earned in programs carried during regular and summer studies, depending on admission and department offerings. Among the programs offered for the master of science for teachers degree is a concentration in art education designed for those holding the bachelor of fine arts degree (or a bachelor of arts degree with an art major) which leads to the graduate degree and permanent certification to teach in the public schools of the State of New York. This is a September start.

Those interested in graduate study should request a copy of the Graduate Bulletin, which describes the degrees offered, the programs of study, and the procedures governing admission.

Course descriptions
For a complete outline of courses offered at RIT, please request the Course Description Catalog from the Admissions Office.

Advising

Peers, faculty, support staff and administration all contribute to effective advising. Students are urged to participate and take on the responsibility of obtaining good advising. Many resources are provided. Self advising information is available through a variety of sources: RIT bulletin, program outline as printed in the Viewbook, CFAA Handbook for undergraduate and graduate students, grade reports, transcripts and a log sheet that records completed courses and requirements.

It is recommended that each student select an advisor and develop a working relationship for program and career advising. Questions about degree requirements and the selection of an advisor should be directed to the associate dean for graduate studies and to the assistant dean for undergraduate studies.

Transfer program

The College of Fine and Applied Arts offers a summer transfer program for art and design majors. Successful completion of this program qualifies students for second-year standing in the following options: graphic design, packaging design, industrial and interior design, painting, printmaking, painting-illustration, printmaking-illustration, or medical illustration. Designed especially, though not exclusively, for graduates of community colleges, this transfer program is open to students with:

1. good academic standing at another college;
2. one or two years of college, with a heavy emphasis in studio art (minimum of 12 semester or 18 quarter credit hours);
3. presentation of an acceptable art portfolio demonstrating strength in one or more areas.
4. dependent on previous education, credit evaluation and portfolio review some students may qualify for third-year standing after summer school study in selected programs. This review is arranged through the assistant dean.

Articulation

Transfer credit is evaluated on an individual basis through the admission process. The strength of the portfolio and academic transcripts is reviewed to determine the equivalent standing in the RIT program. Students from design schools follow specific procedures for application and should contact their director of education for complete information about transferring.

Summer session

The College of Fine and Applied Arts offers a program of summer study in both the School of Art and Design and the School for American Craftsmen that is arranged for designers, teachers, and craftspeople. Both basic and advanced workshops are given as well as graduate courses. Those interested should write the director of the summer session for information.

Junior year abroad

The School for American Craftsmen, in cooperation with the Scandinavian Seminars, offers a junior year abroad in the field of the crafts. This permits certain well-qualified students to spend their third year of study in one of the Scandinavian countries, after which they return for a fourth year of study at RIT. Full credit for the year of satisfactory study overseas will be granted toward the BFA degree if arrangements are made prior to departure. Information on the junior year abroad program can be obtained by writing the dean, College of Fine and Applied Arts.

Policy regarding student work

The College of Fine and Applied Arts reserves the right to retain student work for educational use or exhibition for a period of time not to exceed one and one-half quarters beyond the year the object has been made. The college also reserves the right to select an example or examples for its permanent collection. In such cases, where work is selected for the permanent collection the material cost only will be paid by the college. It is an honor to have one's work in the permanent collection of the College of Fine and Applied Arts.

Attendance regulations

The programs of the college utilize studio and shop experiences 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, and to complete assignments, will be taken into consideration in grading.

Professional approach

Educational programs in the College of Fine and Applied Arts are related to the kinds of art services which the society needs, and based on teaching projects which can be made realistic and meaningful to the student. The programs duplicate, as far as possible, those found in the working situation after graduation. The courses are full-time, instruction is largely on an individual basis, and full opportunity is given for personal development. Exhibitions, lectures, and field trips add breadth and variety to the formal programs of study.

A unique feature of the educational programs offered in the College of Fine and Applied Arts is its emphasis on the professional approach to the understanding and solution of problems. Instructional services provided by a professionally experienced and oriented faculty, plus the well-equipped shops and studios designed with the needs of professional artists, designers or craftspeople in mind, further emphasize the practical character of this program of instruction.

Students are asked to demonstrate a professional attitude and purpose, to apply themselves to the requirements of the program, to cooperate in the fulfillment of its goals, and to assume some responsibility for their educational development through independent work.

Relationship with other RIT schools

Educational facilities of a rare sort in the arts are available to the student in the School of Art and Design—the superior resources of the School of Photographic Arts and Sciences and the School of Printing Management Sciences. A program of instruction which emphasizes production, as well as design of the crafts, gives a unique character to the educational program in the School for American Craftsmen. A few programs offer cooperative education (co-op) as an option to be taken during the Summer Quarter.

The School of Arts and Design, in addition to its major concentrations, offers courses in drawing, design, and art electives required in the curriculum. Craft electives are taught by the School for American Craftsmen. Students may select, with advising and as space is available, elective courses in the college; these complement their programs and interests.

Packaging design students enroll in courses taught by the College of Applied Science and Technology, especially in the areas of production, marketing and materials.

Portfolio Guidelines for Undergraduate Applicants

The following guidelines are presented for all undergraduate students (including transfers) applying to the College of Fine and Applied Arts. Presentation of the portfolio is one of the requirements used in totally assessing the performance and academic capabilities of the applicant. The selection of the work to be included is an important consideration in determining skills, concepts, craftsmanship and design sensitivity.

1. The portfolio must contain examples of at least 10 pieces of the applicant's best work—35mm slides are required, displayed in an 8 ½ " x 11" vinyl slide protector page with identification. It is recommended that drawing be included.

For medical illustration applicants, six additional drawings of natural forms (shells, figures, animals) rendered in a single medium are required.

School for American Craftsmen applicants should submit samples of work in the area of their selected craft major.

2. All portfolio work must be submitted as slides for committee review. Original work is not accepted.

3. Slides will be returned by the College of Fine and Applied Arts only when return postage is enclosed.

4. While every precaution will be taken to ensure proper care and handling, the Institute assumes no responsibility for loss or damage to slides.

5. Identify slides by name and address.

6. Please send portfolio and all other application materials to:

Rochester Institute of Technology
Office of Admissions
One Lomb Memorial Drive
P.O. Box 9887
Rochester, New York 14623
Telephone: (716) 475-6631

Visits to the campus and College of Fine and Applied Arts are encouraged. Please contact the Admissions Office.

Admission at a Glance: College of Fine and Applied Arts

General information on RIT's admission requirements, procedures and services is detailed on pages 153-154 of this bulletin.

This college is composed of the School of Art and Design and the School for American Craftsmen, with approximately 750 students.

Students are urged to develop the highest technical abilities as well as personal creative expression. The faculty includes many of the nation's most outstanding and creative artists, designers and craftsmen. Students learn by working in the studios equipped with excellent facilities. Most graduates earn their living utilizing their RIT background.

Graphic Design—Graphic design has many facets. A visual problem solver at the core, the graphic designer is concerned with achieving the highest level of information and aesthetic quality in the work. Graphic designers work ior advertising, corporate design offices, government offices, magazines, industrial firms, printers, offices, museums and other organizations.

Fine Arts—Students may concentrate in printmaking, painting, printmaking-illustration, painting-illustration or medical illustration. They prepare as professional artists, developing performance levels that enable graduate degree studies in studio concentrations and careers in many of the visual arts fields or teaching. The printmaking-illustration or painting-illustration students prepare for careers as studio artists or as illustrators. Medical illustrators enter research areas in hospitals, publishing and teaching institutions. Degrees granted: AAS—2 year; BFA—4 year.

Industrial and Interior Design—The program prepares students for careers in the expanding professions of industrial design and interior design. Artistic talent and analytical thought are applied to the design of products and interior spaces. Practical design projects develop aesthetic understanding, technical abilities, sensitivity to human needs and awareness of the social consequences of the designer's efforts. Degrees granted: AAS—2 year; BFA—4 year.

Packaging Design—Students study design applications for project packaging in an interdisciplinary program emphasizing design, management, packaging theory and techniques, and liberal arts. Practical application of design theory is an important component of this program. Graduates are prepared to enter corporate packaging and marketing departments and packaging consulting firms. Degree granted: BS—4 year.

Ceramics and Ceramic Sculpture—Graduates are self-employed as designer craftsmen, designers or technicians in industry, teachers, or administrators of craft programs. Professional competencies are developed in such areas as fabrication, chemistry and application of glazes, organization of ceramic shop for efficient production, ceramic raw materials, kiln types, fuels and construction. Degrees granted: AAS—2 year; BFA—4 year.

Glass—Graduates are self-employed designer craftsmen, designers or technicians in industry, teachers, or administrators of craft programs. Professional competencies are developed in organization and construction of the glass studio, functions and care of tools, analysis of glass as a material, glass fabrication, glass design, engraving, cold-working techniques, mixing of batch glass, color and fuming techniques. Degrees granted: AAS—2 year; BFA—4 year.

Metalcrafts and Jewelry—Graduates are self-employed designer craftsmen, designers or technicians in industry, teachers or administrators of craft programs. Professional competencies are developed in use of equipment, metalcrafts, techniques and production in various metals, raising, forging, forming, planishing, enameling, design of jewelry, flatware, holloware. Degrees granted: AAS—2 year; BFA—4 year.

Weaving and Textile Design—Graduates are self-employed designer craftsmen, designers or technicians in industry, teachers, or administrators of craft programs. Professional competencies are developed in such areas as fabric design; analysis of equipment and problems, pattern drafting, analysis of fibers, use of eight to ten harness looms, techniques of weaving, design within price range and use. Degrees granted: AAS—2 year; BFA—4 year.

Freshman Admission Requirements **Transfer Admission with junior standing**

Program[1]	Required High School Subjects*	Desirable Elective Subjects	Two-Year College Programs
Graphic Design	1 year any mathematics; 1 year any science	Art courses; portfolio of original artwork required	Art, design for commercial art. Admissions and class standing determined in part by evaluation of required portfolio. Where student lack sufficient art credit, a summer transfer program is offered at RIT.
Fine Arts painting, printmaking medical-illustration painting-illustration printmaking-illustration	1 year any mathematics 1 year any science; 2 years science for medical-illustration	Art courses; portfolio of original artwork required examples of natural forms for medical illustration	Art or commercial art. Admission and class standing determined in part by evaluation of required portfolio. Where a student lacks sufficient art credit, a summer transfer program is offered at RIT. Space in medical illustration is limited at admission time, and a special portfolio is required.
Industrial and Interior Design	1 year any mathematics; 1 year any science	Art courses; portfolio of original artwork required.	Art or commercial art. Admission and class standing determined in part by evaluation of required portfolio. Where student lacks sufficient art credit, a summer transfer program is offered at RIT.
Packaging Design	1 year science; 3 years mathematics	Art courses; chemistry, physics; algebra; geometry; portfolio of original artwork required.	Art, design, or commercial art, and chemistry algebra, physics, biology. Admission and class standing determined in part by evaluation of required portfolio. Where student lacks sufficient art credit, a summer transfer program is offered at RIT.
Ceramics and Ceramic Sculpture	1 year any mathematics; 1 year any science	Art or industrial courses; portfolio or original ceramics work required.	Transfer as a junior is uncommon, as comparable programs are not generally available at other colleges, but with additional summer study, acceleration is possible
Glass	1 year any mathematics; 1 year any science	Art or industrial courses; portfolio or original glass or ceramic work required	Transfer as a junior is uncommon, as comparable programs are not generally available at other colleges, but with additional summer study, acceleration is possible.
Metalcrafts and Jewelry	1 year any mathematics; 1 year any science	Art or industrial courses; portfolio of original metals work required.	Transfer a a junior in uncomon as comparable programs are not generally available at other colleges but with additional summer study, acceleration is possible.
Weaving and Textile Design	1 year any mathematics; 1 year any science	Art or industrial courses; portfolio of original textiles work required	Transfer as a junior is uncommon, as comparable programs are not generally available at other colleges, but with additional summer study, acceleration is possible.
Woodworking and Furniture Design	1 year any mathematics; 1 year any science	Art or industrial courses; portfolio of original wood work required.	Transfer as a junior is uncommon, as comparable programs are not generally available at other colleges, but with additional summer study, acceleration is possible

'About one-third of the courses in each program consist of electives in social science, literature and humanities.
'Four years of English are required in all programs (except where state requirements differ).

Woodworking and Furniture Design —Graduates are self-employed designer craftsmen, designers or technicians in industry, teachers, "or administrators of craft programs. Professional competencies are developed in such areas as functions and care of woodworking tools, wood as a material, techniques of wood fabrication, design layout, construction analysis, veneering, and finishing, estimating, and production. Degrees granted: AAS-2 year; BFA-4 year.

Double Crafts Major—The double crafts major enables the student to study for two years each in two different craft disciplines. Requests for this option may be made either when first applying to RIT or after successfully completing two years in one major concentration. A portfolio reflecting both craft majors is required. Degrees granted: AAS—2 year; BFA—4 year.

School of Art and Design

The objectives of the programs are to prepare students for a wide variety of positions in which art is related to commerce and industry. Students are prepared to accept major responsibility for the creation and execution of projects in graphic, industrial and interior, and packaging design; painting; printmaking; painting-illustration; printmaking-illustration; and medical illustration.

The educational objectives of the School of Art and Design are to encourage imagination, creative ability, and a sense of artistic discrimination; to develop the skills essential to professional competence; to relate the various arts and to assist students in finding the means to enjoy them; and to cooperate with the College of Liberal Arts in helping students grow culturally and socially; and to inspire them to make their maximum contributions as creative artists and citizens. Aesthetic and applied concepts are brought together.

Programs

Major concentrations are offered in graphic design, industrial and interior design, packaging design and the fine arts (painting, printmaking, painting-illustration, printmaking-illustration, medical illustration). Electives may be pursued, beginning in the second year, in painting, printmaking, industrial and interior design, graphic design and the crafts. The first year forms the foundation preparation for the major concentration, with courses required in drawing and two- and three-dimensional design. Graphic design is a program-that deals with systematic thinking, strong visual fundamentals, aesthetic/informational requirements, problem solving and methodology. New communications technologies such as computer graphics are utilized. The program in industrial and interior design prepares students for careers in the expanding professions of industrial design and interior design. Artistic talent and analytical thought are applied to the design of products and interior spaces. Practical design projects develop aesthetic understanding, technical abilities, sensitivity to human needs and awareness of the social consequence of the designer's effort. Packaging design is an interdisciplinary program that emphasizes design, management, packaging theory and techniques. The practical application of design theory is also an important component of the program.

Yr.	GRAPHIC DESING, PAINTING, PRINTMAKING, INDUSTRIAL AND INTERIOR DESIGN, PAINTING-ILLUSTRATION, PRINTMAKING-ILLUSTRATION MAJORS	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	FADF-231, 232,233 Two Dimensional Design	3	3	3
	FADF-241,242,243 Three-Dimensional Design	3	3	3
	FADF-205, 206,207 Creative Sources	2	2	2
	FADF-210, 211,212 Drawing	4	4	4
		4	4	4
	tPhysical Education Elective	0	0	0
2†	FSCF-225,226,227 Art and Civilization	3	3	3
		4	4	4
	Education Elective	0	0	0
	"Electives (must have two studios each quarter- one which must be the core in which you are going to major			
	•"FADC-301, 302, 303 Graphic Design			
	'"FADD-301, 302,303 Introduction to Industrial, Interior and Packaging Design	4	4	4
	'"FADP-301,302,303 Introduction to Fine Arts	4	4	4
	See Note Below			
3	FSCF-380 Contemporary Art (one quarter required; offered every quarter)	3		
	#Art History Electives (select two)		3	3
		4	4	4
	Major (one)			
	FADR-401, 402,493 Printmaking			
	FADR-404, 405, 406 Printmaking-illustration			
	FADC-401, 402,403 Graphic Design	6	6	6
	FADP-401,402,403 Painting			
	FADP-404, 405, 406 Painting-Illustration			
	FADD-401, 402,403 Industrial and Interior Design			
	"Electives (one quarter)	3	3	3
4		4	4	4
	Major (one)			
	FADR-501, 502, 503 Printmaking			
	FADR-504, 505, 506 Printmaking-illustration			
	FADC-501, 502,503 Graphic Design			
	FADP-501, 502,503 Painting	9	9	9
	FADP-504, 505, 506 Painting-Illustration			
	FADD-501, 502, 503 Industrial and Interior Design			
	"Electives (one per quarter)	3	3	3

tUpon completion of the second year, the associate in applied science degree is awarded.
"Additional intercollege studio courses are available by recommendation of the academic advisor and administrator. Electives are registered on a space available basis and subject to change without prior notic. Consult the advisor when planning programs.
'"Core Electives—Introductory courses that are prerequisite to the respective third year major. FADC-301,302, 303, required for entrance into Graphic Design major; FADP-301, 302, 303 for all fine arts majors. However, all three CORE Electives are available as elective choices.
#Total of 18 quarter credits of Art History: Art and Civilization and Contemporary Art required.
tSee page 176 for policy on Physical Education.
'Seepage 118 for Liberal Arts requirements. Fine and Applied Arts students are only required to study 24 qtr. cr. of Liberal Arts Core curriculum. They are advised to select from nine courses other than fine arts.

NOTE: Beginning September 1982 students in their second year of study will select only two art courses, one will be a core prerequisite and the second course may be a core or an art elective. Core courses will be four credits each and meet for nine clock hours. Recommended program in two art core courses.

The fine arts serve the student who is interested in concentrated study in areas of painting, printmaking, painting-illustration, printmaking-illustration, or medical illustration, and electives of additional art choices. Students emerging from this program are prepared as professional artists and have exploratory potentialities for later careers in teaching. An option within fine arts exists with concentration in medical illustration for a few further selected students, thus leading to work in health areas.

Medical illustration students will be taught Gross Anatomy through the University of Rochester during the Spring Quarter of the junior year. A tuition surcharge will be in effect that quarter.

The credit requirements for students admitted September 1988 in Fine Arts —Painting; Printmaking; Painting-illustration; Printmaking-illustration; Graphic Design; and Industrial and Interior Design programs are as follows:

	Qtr. Cr.
Required Major	84
Required Professional Electives	21
Open Electives	9
Liberal Arts	50
Art History	18
Creative Sources	6
	191

Freshmen Kit for art and design students is approximately $260. There is an additional cost for supplies.

Course descriptions
For a complete outline of courses offered at RIT, please request the Course Description Catalog from the Admissions Office.

Electives

FADC-411, 412, 413	Graphic Design
FADC-511, 512, 513	Graphic Design
FADC-520	Professional Design Business Practices
FADD-320	Graphic Visualization
FADD-311, 312, 313	Industrial and Interior Design
FADD-411, 412, 413	3-D Computer Graphics
FADP-320	Color
FADP-321, 322, 323	Illustration
FADP-411, 412, 413	Drawing and Painting
FADP-511, 512,513	Painting
FADR-411, 412, 413	Printmaking
FADR-511, 512, 513	Printmaking
FADS-411, 412, 413	Sculpture
FADP-450	Drawing Problems
FSCC-251, 252, 253	Ceramics I
FSCG-251, 252, 253	Glass I
FSCM-251, 252, 253	Metalcrafts I
FSCT-251, 252, 253	Textiles I
FSCT-520	Business Practices for Crafts
FSCW-251, 252, 253	Woodworking I
PPHF-207, 208	Introduction to Filmmaking
PPHG-209	Introduction to TV
PPHG-207, 208, 209	Still Photography
PPRT-201, 202, 203	Typographical Composition

Yr.	MEDICAL ILLUSTRATION OPTION	Qtr. Credit Hours		
		FALL	WTR.	SPG.
	(CFAA portfolio and additional six drawings of natural forms, to be presented as slides, are required for admission.)			
	FADF-231, 232, 233 Two Dimensional Design	3	3	3
	FADF-241,242, 243 Three-Dimensional Design	3	3	3
1	FADF-205,206,207 Creative Sources	2	2	2
	FADF-210,211,212 Drawing	4	4	4
		4	4	4
	tPhysical Education Elective	0	0	0
	FSCF-225,226,227 Art and Civilization	3	3	3
		4	4	4
	Education Elective	0	0	0
	'"FADP-311,312,313 Medical Illustration	4	4	4
2†	SBIG-205 General Biology	4		
	SBIG-231, 232 Human Biology		4	4
		4	4	4
	FADP-421,422,423 Medical Illustration Applications	8	8	5
3	Gross Anatomy (U of R)t			7
		3	3	
		4	4	6
	FADP-531,532, 533 Advanced Medical Illustration	6	6	6
	Select One; courses may be mixed:			
4	FADD-411,412,413 Industrial and Interior Design			
	FADD-320 Graphic Visualization	3	3	3
	FADC-411,412, 413 Graphic Design			
	"Art Elective (one per quarter)	3	3	3

"Art Electives listed on previous page.
'"Core courses that are prerequisite to the third year.
'"3 quarters of Still Photography may be substituted.
tA tuition surcharge will be applied in this quarter.
'Upon successful completion of the second year, the association in applied science (fine arts—painting) degree is awarded.
tSee page 176 for policy on Physical Education.
'See page 118 for Liberal Arts requirements. Fine and Applied Arts students are required to study only 24 qtr. cr. of Liberal Arts core curriculum. They are advised to select from nine courses other than fine arts.

Yr.	PACKAGING DESIGN	Qtr. Credit Hours		
	»	FALL	WTR.	SPG.
	FADF-231, 232,233 Two Dimensional Design	3	3	3
	FADF-241,242, 243 Three-Dimensional Design	3	3	3
	FADF-205, 206, 207 Creative Sources	2	2	2 .
1	IPKG-201 Principles of Packaging	4		
	SMAM-204 College Algebra and Trigonometry		4	
	SBIG-289 Contemporary Science- Biology			4
		4	4	4
	Education Elective	0	0	0
	FSCF-225,226,227 Art and Civilization	3	3	3
	FADD-301,302, 303 Introduction to Industrial, Interior and Packaging Design	4	. 4	4
	IPKG-311 Packaging Materials I	3		
	IPKG-312 Packaging Materials II		3	
2	IPKG-321 Container Systems I			4
	SCHG-289 Contemporary Science - Chemistry		4	
	SPSP-289 Contemporary Science - Physics			4
		4	4	4
	tPhysical Education Elective	0	0	0
	FADKL-401,402,403 Packaging Design II	4	4	4
	IPKG-431 Packaging Production Systems	4		
	IPKG-432 Packaging for Distribution		4	
	IPKG-433 Packaging for Marketing			4
3	IPKG-310 Methods of Evaluation			2
	ICSA-200 Survey of Computer Science	4		
	GLLC-520 Effective Speaking		4	
		4		4
			3	
	FADK-501,502,503 Packaging Design III	4	4	4
	IPKG-420 Technical Communications		3	
4	IPKG-401 Career Seminar			1
	Art History Elective	3		
		4	4	4
		3	3	3

•See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Art History: select two courses—
FSCF-300 History of Design
FSCF-310 History of Crafts
FSCF-320 History of Art Criticism
FSCF-330 Philosophy in Art
FSCF-340 Symbols and Symbol Making
FSCF-350 Asian Art
FSCF-360 18th and 19th Century Art
FSCF-370 20th Century Art
FSCF-390 Selected Topics

School for American Craftsmen

The objectives of the programs of study of the School for American Craftsmen are to provide for creative growth, the development of professional competence, and intellectual and cultural enrichment. Students who complete the two-year program are prepared for work in the design studios and workshops of established craftspeople, or as technicians in industry. Those who complete the four-year course of study are prepared for careers as self-employed designer-craftspeople, as designers or technicians in industry, or as teachers or administrators of crafts programs.

In order to achieve the desired occupational goals, the educational objectives seek to stimulate creative imagination and technical invention, develop knowledge of process and command of skills, foster appreciation, not only of the crafts, but the related arts. The program strives to inspire the student to seek continual improvement through analysis and self-evaluation, and to cooperate with the College of Liberal Arts in assisting students to develop personally and socially.

Student responsibilities
Students are responsible for the care and cleanliness of their shops and for the care and maintenance of the tools and machines with which they work. No student may use any machine until instruction in its proper use has been given, and responsibility for observing safety precautions is assumed by each student upon entering the school. Some unique supplies are provided for convenience and choice, but financial obligations must be met for successful completion of courses. Fees for kiln firings, supplies, and furnace use are student responsibilities.

Yr.	CRAFT MAJORS, DOUBLE CRAFTS MAJORS*	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	FADF-231,232,233 Two Dimensional Design	3	3	3
	FADF-205,206,207 Creative Sources	2	2	2
	FADF-261,262,263 Drawing Crafts	3	3	3
		4	4	4
	Materials and Processes (one)			
	FSCC-200 Ceramics			
	FSCG-200 Glass			
	FSCM-200 Metalcrafts	5	5	5
	FSCT-200 Textiles			
	FSCW-200 Woodworking			
	tPhysical Education Elective	**0**	**0**	**0**
2†	FSCF-225,226,227 Art and Civilization	3	3	3
	FADF-241,242,243 Three Dimensional Design	3	3	3
		4	4	4
	Materials and Processes (one)			
	FSCC-300 Ceramics			
	FSCG-300 Glass			
	FSCM-300 Metalcrafts	5	5	5
	FSCT-300 Textiles			
	FSCW-300 Woodworking			
	IPhysical Education Elective	**0**	**0**	**0**
3	FSCF-380 Contemporary Art (one quarter required; offered every quarter)	3		
	##Art History Electives (select two)		3	3
		4	4	4
	Materials and Processes (one)			
	FSCC-400 Ceramics			
	FSCG-400 Glass			
	FSCM-400 Metalcrafts	5	5	5
	FSCT-400 Textiles			
	FSCW-400 Woodworking			
	"Electives (one per quarter)	3	3	3
4		4	4	**6**
	Techniques and Thesis (one)			
	FSCC-500 Ceramics			
	FSCG-500 Glass			
	FSCM-500 Metalcrafts	8	**8**	**8**
	FSCT-500 Textiles			
	FSCW-500 Woodworking			
	"Electives (one per quarter).	3	3	3

#Double Crafts Major: The first two years are the same as a crafts major third year FSC 300 (5 cr.), FSC 400(5 cr.); fourth year FSC 400 (5 cr.), FSC 500 (8 cr.). BFA degree totals 185 quarter credits.
tUpon satisfactory completion of the second year, the associate in applied science degree is granted.
"Additional intercollege studio courses are available by recommendation of the academic advisor and administrator. Electives are registered on a space available basis and are subject to change without prior notice. Consult the advisor when planning programs. Craft students elect in studio other than their major concentrations.
##Totai of 18 quarter credits of Art History: Art and Civilization and Contemporary Art are required.
tSee page 176 for policy on Physical Education.
'See page 118 for Liberal Arts requirements. Fine and Applied Arts students are required to study only 24 qtr. cr. of Liberal Arts core curriculum. They are advised to select from nine courses other than fine arts.

Programs of study
The School for American Craftsmen offers a full-time program of study with opportunity for concentration in one of five craft fields: ceramics and ceramic sculpture, metalcrafts and jewelry, weaving and textile design, woodworking and furniture design, and glass. After satisfactory completion of two years of study the associate in applied science degree is granted. Those with the aptitude ana interest for further study may continue for two additional years. After sucessful completion of the four-year program the bachelor of fine arts is awarded. A double crafts major will study two years in each of two craft areas. A bachelor of fine arts is awarded after a total of four years study.

Course descriptions
For a complete outline of courses offered at RIT, please request the Course Description Catalog from the Admissions Office.
Electives
FADC-411, 412, 413 Graphic Design
FADC-511, 512, 513 Graphic Design
FADC-520 Professional Design Business Practices (Spg. Qtr.)
FADD-320 Graphic Visualization
FADD-311, 312, 313 Industrial and Interior Design
FADD-411, 412, 413 3-D Computer Graphics
FADP-320 Color
FADP-321, 322, 323 Illustration
FADP-411, 412, 413 Drawing and Painting
FADP-511, 512, 513 Drawing and Painting
FADR-411, 412, 413 Printmaking
FADR-511, 512, 513 Printmaking
FADS-411, 412, 413 Sculpture
FSCC-251, 252, 253 Ceramics I
FSCG-251, 252, 253 Glass I
FSCM-251, 252, 253 Metalcrafts I
FSCT-251, 252, 253 Textiles I
FSCW-251, 252, 253 Woodworking I
PPHG-207, 208, 209 Still Photography
Art History: select two courses
FSCF-300 History of Design
FSCF-310 History of Crafts
FSCF-320 History of Art Criticism
FSCF-330 Philosophy in Art
FSCF-340 Symbols and Symbol Making
FSCF-350 Asian Art
FSCF-360 18th and 19th Century Art
FSCF-370 20th Century Art
FSCF-390 Selected Tbpics

The credit requirements are:

	Qtr. Cr.
Required Craft Major	**96**
Required Professional Electives	12
Open Electives	**6**
Liberal Arts	**50**
Art History	18
Creative Sources	**6**
	188

Double Crafts credit requirements are:

	Qtr. Cr.
Required Crafts (2) Major	**93**
Required Professional Electives	12
Open Electives	**6**
Liberal Arts	**50**
Art History	18
Creative Sources	**6**
	185

College of Graphic Arts and Photography

Dr. E.C. Mclrvine, Dean

The College of Graphic Arts and Photography encompasses the School of Photographic Arts and Sciences, the School of Printing Management and Sciences, the Center for Imaging Science and the Technical and Education Center of the Graphic Arts.

The **School of Photographic Arts and Sciences** was established in 1930 with a two-year course for the training of technicians for the photographic industry. It now offers undergraduate programs leading to the bachelor of science degree in biomedical photographic communications; a BS degree in film and video; a BS degree in photographic processing and finishing management; a BS degree in technical photography and a BFA degree in professional photographic illustration with major options in contemporary/illustrative/ commercial photography, narrative/ documentary/editorial photography, or photography as a fine art. A program jointly offered with the College of Business leads to a BS degree in photographic marketing management. Graduate programs lead to an MFA degree in imaging arts with three areas of concentration: photography, computer animation and museum studies. The School also offers an advanced certificate in electronic and optical storage applications. More than 900 students are enrolled from nearly every state and many foreign countries.

In 1937 the Institute absorbed the Empire State **School of Printing** with the object of establishing advanced technological education in printing and the graphic arts. The School of Printing Management and Sciences offers programs leading to a BS degree in printing with many options for specialization. The BS program in newspaper production management provides graduates who can synthesize the new technologies into the newspaper technical department and provide long-range management planning to this important segment of the printing industry. The program in printing and engineering systems combines printing and industrial engineering, and prepares graduates for optimizing operating conditions in the complex printing establishment.

The BS degree in printing and applied computer science further expands the scope of the school's offerings. The school also offers three master of science degrees: graphic arts systems, graphic arts publishing, and printing technology. Over 500 degree candidates are enrolled in the School of Printing Management and Sciences, with students from almost every state and many foreign countries.

The **Center for Imaging Science** was established at RIT in 1985 in response to a growing need for highly qualified imaging scientists. However, programs in imaging science are not new to RIT. The center is an outgrowth of the highly successful program in Imaging and Photographic Science, a program that demonstrates RIT's ability to provide quality education in this field.

RIT offers the only imaging science undergraduate program in the country. Students who choose this program will study the application of physics, computer science, chemistry and mathematics to the formation, recording and perception of images. They will learn about the design of imaging systems, the evaluation of the images produced and the application of those systems to a broad range of careers in industry, business and government.

Students may concentrate in digital image processing, remote sensing, photographic chemistry, optics, image evaluation or color appearance and technology. Theory and practical applications in preparation for a career following graduation are the cornerstones of the program.

The **Technical and Education Center,** with its own full-time staff, renders service to various segments of the graphic arts. It also conducts short, highly specialized courses for men and women engaged professionally in the graphic arts and photography.

Resources

The college is housed in a building that has been specifically designed for instruction in photography and printing. Its many specialized laboratories and wide range of equipment make it the most complete of any degree-granting institution in these fields.

The faculty members have been carefully selected on the basis of their teaching effectiveness and ability to relate well with the students. They are also individuals who are educationally qualified and have had extensive professional experience and training in the graphic arts, photographic industries and imaging science.

The establishment of four distinguished professorships highlights this qualification of the college's teaching staff. The Paul and Louise Miller Distinguished Professorship in Newspaper Production Management in the School of Printing Management and Sciences emphasizes the importance placed on education for persons entering the rapidly changing newspaper industry. The Melbert B. Cary, Jr. Professorship emphasizes the school's continued involvement in typography and design.

The Richard S. Hunter Professorship in Color Science was established to meet academic and industry needs for more clearly defined color measurement and specification criteria from which further knowledge might be ascertained. The Munsell Color Laboratory complements the professorship and supports efforts to further define color measurement in all areas of academic and industry endeavor. Together they have established RIT as a unique center for color science, technology and appearance in the United States. The James E. McGhee Professorship highlights photographic processing and finishing, as well as the photographic marketing and management areas.

Rochester is the world center of research and development in photography, a center of research in the graphic arts, and a city well-known for quality printing. It is an ideal environment for students in either photography or the graphic arts since they have access to a faculty which is close to progress in these fields and, through guest lectures, field visits, and meetings of scientific and professional organizations, they can personally meet many of these leaders in research and development.

RIT's Wallace Memorial Library is rich in both photography and graphic arts publications, and the cooperation of the International Museum of Photography at the George Eastman House (IMP/GEH) and the library of the Kodak Research Laboratories make available one of the largest collections of reference materials for these fields to be found anywhere.

Two special libraries are housed in the college, the Technical and Education Center Library and the Cary Library. The latter contains the Melbert B. Cary, Jr. Graphic Arts Collection, with more than 8,000 volumes of rare books illustrating the past and present of fine printing.

Plan of education

The college seeks to prepare men and women to be professionally competent in their chosen areas and to have an appreciation and understanding of our cultural heritage and democratic institutions. Although the primary concern of the college itself is with science and technology and the occupational aspects of life, it requires that every student take courses in communication, the humanities, and the social and natural sciences. These form an integrated program of liberal education in the College of Liberal Arts and require from one-quarter to one-third of the student's time.

'The college operates on the quarter plan, each quarter being 11 weeks in length. Many classes are available during the summer.

Some programs of the college include a senior thesis as a requirement for the bachelor's degree. This involves independent study and research on a subject chosen by the students and approved by their advisors. The thesis provides the student with the opportunity to make a detailed study of particular interest. It often requires extensive reading, thus making the student more conversant with the literature and, where laboratory research is involved, the student acquires experience in the design of experiments, the conduct of research, and the writing of technical reports. A number of these reports have been presented at meetings of scientific and professional societies and printed in appropriate journals.

The School of Printing Management and Sciences offers a Senior Seminar which brings to campus each year some 15-20 industry people who discuss new developments and technologies in the graphic arts and share how students can prepare to meet new challenges evolving from them.

Academic advising

The academic advising system in the College of Graphic Arts and Photography is designed to provide students with close faculty contact for guidance concerning academic or career problems.

Transfers

With the growth of community, junior and two-year technical colleges throughout the country, many men and women have a better chance to identify their occupational and professional goals. The college recognizes the value of these programs, and, for students who perceive such goals within the scope of the college's programs, every effort is made to accept the maximum amount of transfer credit from the two-year college curriculum. Some scholarships are available.

Degrees and requirements

Candidates for the BS and BFA degrees must complete the requirements of a major program.

Requirements for the MS degrees in imaging science and in color science, appearance and technology, printing technology, graphic arts systems, graphic arts publishing, and the MFA degree in imaging arts can be found in the *Graduate Bulletin.*

Except for the newspaper production management, printing systems and engineering, and printing and applied computer science programs, the associate in applied science degree is awarded all students who successfully complete the requirements of the first two years of the BS or BFA programs.

Summer session and special programs

During the Summer Session the School of Printing Management and Sciences offers a wide range of technical and management courses which may be taken for credit.

Special, intensive summer courses are also available in graphic arts orientation, flexography, gravure and screen printing.

Additional specialized short-term summer programs can be designed by the School of Printing Management and Sciences to meet the particular needs of paper, ink and equipment manufacturers and related segments of the graphic arts industry.

The School of Photographic Arts and Sciences offers several special courses each summer to meet professional or avocational needs not met by four-year programs. It also offers special transfer programs enabling qualified students to enter at the second- or third-year level.

The Center for Imaging Science offers a summer transfer program for students entering at the second- or third-year level. It also offers a selection of elective courses during the Summer Quarter.

Information on summer programs can be obtained from the director of the Summer Session.

Technical and Education Center

The Technical and Education Center of the Graphic Arts serves the printing and graphic communications industry through product testing, continuing education, and the dissemination of information. It enjoys an international reputation as a source of the most current information and techniques in the graphic arts. The center acts as an interface between RIT's academic programs and industry.

The Technical and Education Center staff has been recruited from industry and research organizations. Staff members work to serve industry needs through four main departments: physical testing, information services, the seminar center, and publications.

The Physical Testing Laboratory conducts industry-supported programs for testing paper, plates, blankets, and inks. It has the only full-size, four unit perfecting web offset press for testing in the world. The staff works with paper and ink companies, press manufacturers and printers as consultants and testing coordinators.

The Information Services Library houses an extensive international collection of graphic arts periodicals, technical reports and conference proceedings. These are used to compile a monthly publication, *Graphic Arts Literature Abstracts,* which offers subject-cate- ' gorized, fully indexed informative abstracts of the literature. GALA represents an expanded effort into current awareness and retrospective retrieval capability. The library is open to the public and to RIT graduate printing students.

The Technical and Education Center seminar programs cover all aspects of printing, especially color reproduction. Eighteen continuing titles reappear through the calendar year, and special tailor-made seminars are held for companies on request. Seminars are held on the RIT campus offering printers around the world a chance to encounter new ideas, work with quality control tools, and try procedures firsthand, including time to work on the web press. Traveling seminars bring current technical information to other cities across the country.

The Technical and Education Center Order Department fills domestic and international orders for such items as books, quality control tools, research reports, bibliographies, and periodicals like the *Graphic Arts Literature Abstracts,* the quarterly *Photographic Conservation,* and the *Technical and Education Center Newsletter.* Quality control tools available at the order department include color printing aids, tone reproduction aids, resolution test targets, graph papers, and calculator programs. Photocopies of articles abstracted in GALA are available.

The Technical and Education Center has been able to respond to industry needs over the years with a flexibility that few other resource centers have. The center is expanding—offering more seminars, publishing more bibliographies and books, and filling more orders. Industry support is growing, enabling the center to prosper.

Admission at a Glance: College of Graphic Arts and Photography

General information on RIT's admission requirements, procedures and services is included in detail on pages 153-154 of this bulletin.

The School of Photographic Arts and Sciences, the School of Printing Management and Sciences, the Center for Imaging Science and the Technical and Education Center of the Graphic Arts are included in this college.

The college is internationally known for its excellence and the contributions of its graduates to the world of communication. Faculty members are experts in their fields and students work in laboratories with equipment of unsurpassed quality and variety. Students develop their creative abilities as well as technical competence.

Biomedical Photographic Communications—Prepares students for a photographic career working with allied health teams in hospitals; medical, veterinary or agricultural research centers; and other health institutions. Students can qualify for entry-level employment after the second year. BS candidates will have the educational background necessary to apply for registration as a biological photographer. The professional electives offered in the third and fourth years allow flexibility with specialization achieved through professional concentration courses. Degrees granted: AAS—2 year; BS—4 year.

Film/Video—Features an introduction to the disciplines of film, video and animation with advanced work in either film or video. The curriculum emphasizes production. Short periods of outside professional experience are encouraged, usually during the summer. The program is intended to acquaint students with film, video and animation as creative media and to develop the skills of production. Degrees granted: AAS—2 year; BS—4 year.

Imaging and Photographic Technology—Prepares students for entry into any of a variety of positions in the field of scientific/technical photography, as distinct from providing highly specialized training for a specific position—although a sequence of six concentration electives is included in the third and fourth year. Career opportunities include both picture-making positions (such as scientific photography, photographic instrumentation, technical illustration, audiovisual production, and photographic testing) and non-picture-making positions (such as technical writing, quality control, technical representative, sales, product development and testing, applied research, laboratory supervision, and management). Two paid co-op work experiences (normally scheduled during the summer following the second and third years) are included in the BS degree program. Degrees granted: AAS—2 year; BS—4 year.

Imaging Science—Students learn of the application of physics, chemistry, and mathematics to imaging systems; of the application of imaging and photographic processes to science and technology. Course content is comparable to that of engineering programs—mathematics, physics, and chemistry of radiation-sensitive systems, optics and image formation. Degrees granted: AAS—2 year; BS—4 year.

Newspaper Production Management—Prepares students for careers in technical management for newspaper and related industries by developing appreciation of tactics and strategies for evaluating and controlling production problems. Incorporates engineering approaches to problem solving. This leads to careers such as vice president of operations, publisher, technical quality control or technical sales and service representative. Degree granted: BS—4 year.

Photographic Processing and Finishing Management—Students develop a thorough knowledge of and familiarity with photographic laboratory production techniques and procedures, including process and product quality assurance, supervisory and training methods, controlling business and marketing functions, and a broad base in humanities. Degrees granted: AAS—2 year; BS—4 year.

Printing—Prepares students for careers in printing management by developing an appreciation of aesthetic qualities of good printing and application of science and engineering in graphic arts. Theory and practice in management and communication skills are taught. Degrees granted: AAS—2 year; BS—4 year.

Printing and Applied Computer Science—Prepares students for entry positions in systems analysis, production control, engineering, customer engineering, marketing support, customer training, and product design. These lead to careers in production management, director of computer technology, and operations manager. Degree granted: BS—5 year.

Printing Systems and Engineering—Prepares students for careers that emphasize measurement and control techniques, problem solving and optimization of operating conditions in the industrial technology environment in the printing industry. Favorable transfer credit arrangements can normally be made for students previously enrolled in engineering or math/science-based programs. Degree granted: BS—5 year.

Program	Required High School Subjects*	Desirable Elective Subjects	Two-Year College Programs
Biomedical Photographic Communications	2 years any mathematics, Biology	Additional mathematics and Chemistry	Associate degree in biomedical photography or previous college work in audiovisual with strong emphasis in photography and biology.
Film/Video	2 years any mathematics 1 year any science	Art Courses	Total of 98 quarter credits including 24 credits in liberal arts, 12 credits in science or mathematics, 8 credits in acting and stagecraft, 9 credits in film history and 45 credits equivalent to RIT's PPHF-201,202,203 (Film I), PPHF-210,310 (Mat. & Process of the Moving Image). PPHF-311,312, 313 (Video I) and either animation (8 cr.) orscriptwriting (6 cr.). Portfolio required.f
Fine Art Photography	1 year any mathematics and 1 year any science.	Art and Art history courses, Computers Creative writing	Applicants must have completed an associate degree program, or equivalent, with 30 quarter credits (20 semesters) in photography, 12 (8 semesters) in studio arts and 24 (16 semesters) in liberal arts. History and Aesthetics of Photography is a requirement which can be taken in the third year, or during summer.
Imaging and Photographic Technology	2 years any math; 1 year any science	Additional mathematics and science	Total of 96 quarter credits, including 9 quarter credits in college mathematics. 24 quarter credits in liberal arts, 24 quarter credits in black-and-white and color photography, one year of college physics and one year of college chemistry.
Imaging Science	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics and/or Chemistry	Additional Physics; Additional mathematics	Total of 80 quarter credits, including 20 quarter credits in calculus or higher mathematics, one year of college chemistry, one year of college physics, and 24 quarter credit hours in liberal arts. "C" grade in RIT Summer PIMG-220 and PIMG-320 or equivalent course, or experience; students in engineering science or liberal arts with math/science option usually meet these requirements.
Newspaper Production Management	Elem. Algebra; Trigonometry, or Inter. Algebra; Physics or Chemistry	Additional mathematics, physics or chemistry	Associate's degree in graphic arts including a wide range of courses in liberal arts, a year of college mathematics, college chemistry and physics, and courses in business, management, computers and others. Considered on an individual basis, students should contact the department.
Photographic Processing and Finishing Management	Elem. Algebra; Plane Geom. or Inter. Algebra; Chemistry or Physics	Additional mathematics and science	Because of a liberal selection of professional electives trans-ferring at the end of two years is easily accomplished for photography and business majors. Others should contact program faculty for evaluation of credit.
Printing	Elem. Algebra and Inter. Algebra; 1 year science	Printing courses or experience with school publication; chemistry; physics; Interest in printing additional mathematics	Associate degree including wide range of courses in liberal arts, college mathematics, college chemistry and physics, and courses in business, management, computers and printing. Considered on an individual basis; student should contact the department.
Printing and Applied Computer Science	Elem. Algebra; Inter. Algebra; Trigonometry; Plane Geometry; Physics or Chemistry	Additional mathematics and science	Considered on an individual basis.
Printing Systems & Engineering	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics and Chemistry	Additional mathematics	Considered on an individual basis.
Professional Photographic Illustration	2 years any mathematics 1 year any science	Art courses •	Applicant must have completed an associate's degree program, or the equivalent of two years of college, with a major in photography (completion of minimum of 30 quarter credits of photography) plus completion of studio art courses (minimum of 12 quarter credits); liberal arts (24 quarter credits); and art history (9 quarter credits). The student must also complete the 10-week intensive summer course PPHL-300, BFA Photography, with a C grade or better. The student must also make up two courses: Materials and Processes of Photography and History and Aesthetics of Photography. Portfolio required.f

'Four years of English are required in all programs, except where state requirements differ.

fPortfolio must consist of a series of 8x10 black-and-white photographs, an 8 or 16mm film, a video tape, or a written work that demonstrates creativity in the English language.

Professional Photographic Illustration—After two years of photography in the general BFA program at RIT, a student enters one of the following three major options: contemporary/illustrative/commercial photography; narrative/documentary/editorial photography; or photography as a fine art. In these areas students learn photographic skills to solve visual communication problems. Students develop innovative and individualized responses to visual problems and are expected to become sensitive to contemporary graphic design. These lead to a broad range of career options that call for a background in aesthetics, technical skills, and the ability to solve visual problems with imagination and originality. Degrees granted: AAS—2 year; BFA—4 year.

School of Photographic Arts and Sciences

Thomas P. Iten, Director

The program offerings of the School of Photographic Arts and Sciences are designed to prepare students for photographic and other imaging career fields. The studies in photographic arts involve both technical and creative experiences for visual problem solving. In the science and technology divisions of the school, emphasis is placed on the physical principles of imaging, and studies cover image evaluation, unconventional imaging applications, computer applications as well as other high-technology areas. All first-year BFA students in photography and students in biomedical photographic communications and technical photography are required to have their own hand-held small or medium format 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 other related activities.

Faculty

The School of Photographic Arts and Sciences faculty represent a rich cross-section of various photographic fields: science, technical, professional-illustrative and art.

Faculty members are highly active in professional societies, publications and exhibitions. Each one considers teaching to be his or her first and most important function. Several have received outstanding teaching awards and other professional recognition.

Degrees offered

Department of Applied Photography: BFA degree in professional photographic illustration—Owen Butler, chair

Department of Biomedical Photographic Communications: BS degree in biomedical photographic communications—William W. DuBois, chair

Department of Film/Video: BS degree in film/video—Malcolm Spaull, chair

Department of Fine Art Photography: BFA degree in professional photographic illustration, photography as a fine art option; MFA degree in photography—Ken White, chair

Department of Imaging and Photographic Technology: BS degree in imaging and photographic technology —Andrew Davidhazy, chair

Department of Photographic Processing and Finishing Management: BS degree in photographic processing and finishing management—James Rice, chair

Graduate programs

The School of Photographic Arts and Sciences offers: MFA in imaging arts with three areas of concentration: photography, computer animation and museum studies. This degree is described in the *Graduate Bulletin,* available through the Admissions Office. The School also offers an advanced certificate in electronic and optical storage applications.

Summer session

The School of Photographic Arts and Sciences offers a wide selection of photographic courses in the Summer Session. These range from beginning, photography courses to those requiring a substantial photographic background. For detailed information write the director of Summer Sessions for a bulletin.

Memberships

The School of Photographic Arts and Sciences maintains memberships in a number of professional organizations: American Management Association, American Society of Training and Development, Association of Professional Color Laboratories, Biological Photographic Association, National Microfilm Association, Professional Photographers of America, Society of Motion Picture and Television Engineers, Society of Photographic Scientists and Engineers, Society for Photographic Educatioh, University Film Association.

Requirements for admission

All applicants for admission must meet the general requirements for admission to the Institute. The requirements for admission to the School of Photographic Arts and Sciences vary with the program.

It has been our experience that desirable applicants should rank within the top 25 percent of their high school class, score above a combined 1050 SAT score, or achieve an ACT composite of 23. The Institute prefers not to be arbitrary in the establishment of admission criteria and therefore will look at all factors in combination, such as college board scores, high school records, records of achievement, letters of recommendation, and especially the student's written statement of educational objectives. All applicants, except those .transferring from other colleges and universities, must take entrance examinations.

Biomedical Photographic Communications

Applicants for this undergraduate program must have had two years of high school mathematics and one year of biology. Additional mathematics and chemistry are recommended. A personal interview may be required.

Film/Video

Applicants must have had two years of any mathematics, and one year of science. A personal interview may be required. Art courses are recommended.

Imaging and Photographic Technology
Applicants for admission to the imaging and photographic technology program must have had two years of high school mathematics and one year of science.

Photographic Processing and Finishing Management
Applicants for admission in this program must have had two years of high school mathematics, elementary algebra and either plane geometry or intermediate algebra, and chemistry. Additional science is recommended. Course is limited to 30 students each year.

Professional Photographic Illustration
Applicants for photographic illustration must have had two years of mathematics and one year of science. Art courses are recommended.

Fine Art Photography applicants wishing to major in photography as a fine art must have one year of any mathematics, one year of any science and an acceptable portfolio. A personal interview is recommended.

Course descriptions
For a complete outline of courses offered at RIT, please request the Course Description Catalog from the Admissions office.

Transfer admission
A transfer student is a student with acceptable transfer credits who has been accepted into a degree program. He or she may be classified as a first-, second-, third- or fourth-year student. Transfer students should be aware that because of the credits carried with them to RIT, they may have a lighter than normal academic load. Normally a student may not carry more than two photographic lab courses.

An articulation agreement has been reached with approximately 20 colleges and universities. For further information contact the RIT Admissions office at 475-6631.

Transfer credit and transfer program
Transfer credit will be given for applicable courses completed at accredited institutions with a grade of "C" (average) or better. It is not possible for photography students to transfer into the first year in professional photographic illustration, imaging and photographic technology, or film and television from imaging science (CIS) or photographic processing finishing management or other programs at RIT, without incurring loss in time or added expense. Regular transfer procedures apply.

Credit for photography courses will not be accepted without a substantiating portfolio. This work will be reviewed by the appropriate faculty. (Requirements for portfolio submission may be obtained by writing to the Office of Admissions.)

Transfer students should expect to have light schedules during part of their residence at RIT because of prerequisite and scheduling problems.

Summer transfer
The transfer credits necessary for entry into any photographic program must have been completed prior to submitting the application for admission to the June transfer program.

A summer transfer student is one who meets the qualifications of the transfer conditions as outlined above.

There are transfer programs into the second or third year of most of the majors offered by the school. These are for students who have transfer credits in science, art, business, and/or photography. Students in the transfer stream may find it necessary to attend classes during one or more summers.

The School of Photographic Arts and Sciences has several transfer programs for students who have completed background work in an accredited college or university. The preparatory work varies according to the photography program.

Second-year entry (transfer credit requirements):

Film/Video
Normally, a total of 36 credits, including 24 acceptable credits of liberal arts, an acceptable science course (12 credits), plus two summer courses in film (18 credits) as follows:
Motion Picture Workshop I, 9 credits, 5 weeks
Motion Picture Workshop II, 9 credits, 5 weeks
These courses will substitute for:
PPHF-201, 202, 203 (15 credits)
Materials and Processes of the Moving Image PPHF-210 (2 credits)
The remaining required courses in the first year:
Creative Processes I, II, PPHF-551, 552
Play Production I, II (8 credits) must be made up during the second and third years of the program.

Imaging and Photographic Technology
Normally, a minimum of 34 credit hours of which there are 4 credits in a college algebra course; 6 credits in introductory calculus; 12 credits in liberal arts; and 12 credits of photography or a mix of photography and additional mathematics or science. The students must also complete the 10-week intensive summer courses PPHG-200 Photography I and PPHT-210 Materials and Process of Photography with a "C" grade or better.

Applicants may submit a transcript of college courses completed and request a transfer credit audit. Transfer credit will be given for Photography I only on the basis of an acceptable comprehensive portfolio and satisfactory completion of an appropriate college photographic course or evidence of appropriate photographic work experience.

Professional Photographic Illustration
Normally, a minimum of 30 quarter credits of which there are 6 credits of design, 12 credits of liberal arts, and 12 credits of photography or photography and studio art. The student must also complete the 10-week intensive summer courses PPHG-200 Photography I, PPHL-206 Creative Problems, PPHL-207 Intro to Color Photography with a "C" grade or better. ,

Third-year entry (transfer credit requirements):

Fine Art Photography
After successfully completing one year in RIT's BFA foundation program, or one year at an accredited college with an acceptable portfolio (RIT summer transfer course may be required), the student may major in fine art photography in the second, third and fourth years.

Professional Photographic Illustration

Normally an applicant must have completed an associate degree or equivalent of two years of college with a major in photography (completion of a minimum of 30 quarter credits of photography) plus completion of studio art courses for a minimum 12 quarter credits; liberal arts for a total of 24 quarter credits; and art history courses for a total of 9 quarter credits. The student must also complete the 10-week intensive summer course PPHL-300 BFA Photography with a "C" grade or better. The student must make up the course Materials and Processes of Photography and History and Aesthetics of Photography. Portfolio required.

Entry into Professional Photographic Illustration via the submission of a portfolio to earn transfer credits for photographic courses

If a student has completed two or more years of intensive study in photography at an accredited school and has earned a 3.0 (B) average, he or she may submit a portfolio for evaluation by the BFA faculty. A list of the requirements for submission of the portfolio may be obtained from the Office of Admissions, RIT, One Lomb Memorial Drive, P.O. Box 9887, Rochester, New York 14623.

Yr.	BIOMEDICAL PHOTOGRAPHIC COMMUNICATIONS	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	PPHB-201,202,203 Biomedical Photography I	6	6	6
	PPHT-211,212,213 Materials and Processes of Photography	3	3	3
	PPHB-211 Survey of Biomedical Photography			1
	SCLG-301 Medical Terminology	3		
	SBIG-211,212 Human Biology		3	3
	'Liberal Arts (Core)	4	4	4
	tPhysical Education Elective	0	0	0
2†	PPHB-301,302,303 Biomedical Photography II	5	5	5
	PPHT-311 Color Photography/Design	4		
	PPHT-312 Color Photography/Printing Theory		4	
	PPHB-331,332,333 Preparation of Biomedical Visuals	3	3	3
	'Liberal Arts (Core)	4	4	4
	tPhysical Education Elective	0	0	,0
	tSummer (4th Quarter) Internship for 10 weeks in a medical setting			
3	ICIC-413 AV Production for Bio. Comm	4		
	PPHB-401,402 Advanced Photography in Bio. Comm		4	4
	"Professional Electives	3-4	3-4	3-4
	""Science Electives	3-4	3-4	3-4
	'Liberal Arts (Concentration)	4	4	4
	Summer Internship (Optional)			
4	PPHB-501,502,503 Photographic Concentration	4	4	4
	"Liberal Arts (Elective Courses)	4	4	4
	"Liberal Arts (Senior Seminar)		2	
	Business Electives	4	4	4
	"Professional Electives	3-4	3-4	3-4

†Associate degree awarded upon successful completion of second year and the internship.
"Possible recommended professional electives:
PPHF-201 Structuring the Moving Image
PPHG-202 Narrative Film Production
PPRT-591,592,593 Reproduction Photography, Offset Plate Making, Offset Presswork
Electives will be made with the chair's permission.
'"Options include:
Electron Microscopy
Medical Terminology
Computer courses
Advanced courses in the Biological Sciences
'"Selected professional courses may be substituted for 4,8, or 12 credits with written permission of advisor.
'Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Biomedical Photographic Communications

William W. DuBois, Chairperson

The biomedical photographic communications program is designed to prepare students for a photographic career working with allied health teams in hospitals; medical, veterinary or agricultural research centers; and other health institutions. The biomedical photographer can be involved in all areas of still imagery, as well as film and video.

The first-year courses introduce basic principles and theories, as well as practical experience with photographic equipment and processes. Medical and biological subject matter are included in these first-year practical experiences.

The second year continues to prepare the student with courses in photomacrography, photomicrography and other specific studies required for this career. The courses are integrated to prepare the student for an internship in a medical or scientific facility. The completion of the summer internship is required for the associate degree in biomedical photography.

The junior and senior years include electives in advanced photomacrography and photomicrography, filmmaking, television, advanced color printing, and others selected in consultation with the advisor. Flexibility is provided to allow students to explore many areas of photography. The professional concentration courses in the senior year encourage students to research a photographic area specific to their career direction.

The Biological Photographic Association, the certifying and registering professional organization in the biomedical photography field, has cooperated in the preparation of criteria and in program development. Thus the RIT program can provide the educational background to form the basis for qualifying to become a Registered Biological Photographer (RBP) after the student enters the profession.

Film/Video

Malcolm Spaull, Chairperson

The degree program in film, video and animation is designed for students who recognize the moving image as an expressive force uniquely important to modern life. It will acquaint students with film, video and animation as creative media and develop the skills of production.

The curriculum emphasizes production and short periods of outside professional experience are encouraged, usually during the summer.

Through lectures and laboratories students develop individual skills in moving image communication and learn the aesthetic principles governing the art. Elective courses are offered to students in applied photography, photographic technology and MFA in imaging arts. Other Institute students with a basic knowledge of photography may enroll with the permission of the instructor.

Students typically produce several short films or programs, working through all phases of production: scripting, preproduction planning, budgeting, shooting, sound editing and working with a laboratory. Students combine their learning of visual and sound artistry through hands-on experience with camera and sound equipment. The film, video and animation projects are often designed by individual students. Thus a wide variety of styles and intentions are expressed in the work of the department.

Yr.	FILM/VIDEO	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	Liberal Arts (Core)	4	4	4
	English Composition	4		
	Acting and Stagecraft I		4	
	Acting and Stagecraft II			4
	PPHF-201 Film Production I	5		
	PPHF-551 Composition		4	
	PPHF-202 Film Production II			5
	PPHF-551 Creative Processes I		2	
	PPHF-552 Creative Processes II			2
	PPHF-210 Materials & Processes of the Moving Image I	2		
	Physical Education Electives	**0**	**0**	**0**
2	Liberal Arts (Core)	4	4	4
		4	4	4
	PPHF-311 Portable Video Production	4		
	PPHF-312 Studio & Documentary Video		4	
	PPH F-324 Introduction to Animation	4		
	PPHF-310 Materials & Processes of the Moving Image II	2		
	Winter Quarter Begins Declared Emphasis Tract			
	Production Emphasis			
	PPHF-205 Documentary Film/History & Aesthetics		3	
	PPHF-434 Advanced Video			3
				3 or 4
	Writing/Directing Emphasis			
	PPHF-321 Writing for Film & Video		3	
	PPH F-322 Writing for Film & Video			3
	PPHF-406 Directing the Actor			3
	Graphics Emphasis			
	PPHF-325 Introduction to Animation II		4	
	PPHF-326 Animation Production			4
	PPHF-206 Experimental/Animated Film History & Aesthetics			3
	(Student may choose an "Undeclared Emphasis which allows for free scheduling)			
	Physical Education Electives	**0**	**0**	**0**
3	Liberal Arts (Concentration)	4	4	4
	Non-Photo Elective	4	4	4
	PPHF-411 Visual & Commercial Film Production	5		
	PPHF-410 Materials & Processes of the Moving Image III	2		
	PPH F-204 Fiction Film History & Aesthetics	3		
	PPH F-405 Senior Project Seminar			1
	Production Emphasis			
	PPHF-412 Film Planning & Studio Operations		5	
	PPHF-321 Writing for Film & Video		3	
	PPHF-420 Sound Recording			3
	PPHF-553 Film/Video Workshop			4
	Writing/Directing Emphasis			
	PPHF-412 Film Planning and Studio Operations		5	
	PPHF-205 Documentary Film/History & Aesthetics		3	
	PPHF-551 Advanced Script Writing			3
	PPHF-413 Film Project			5
	Graphics			
	PPHF-427 Microanimation I		4	
	PPHF-321 Writing for Film/Video		3	
	PPHF-428 Microanimation II			4
				3 or 4
4	Liberal Arts (Electives)	4	4	4
	Non-Photo Elective			4
	Liberal Arts Seminar			2
	PPHF-541 Senior Production i	**6**		
	PPHF-542 Senior Production II		**6**	
	PPHF-543 Senior Post-Production			4
		3-4	**3-4**	
	"Students may elect any still photography course for which they have the required prerequisites and/or the permission of the instructor. Such courses might include: PPHL-437,438 Visual Communication Workshop; PPHL-301,302,303 History & Aesthetics of Photography.			

"Recommended Science Electives

ICSS-200 Survey of Computer Science	***4 cr.***
ICSP-208 Introduction to Programming	***4 cr.***
ICSP-210 Program Design and Validation	***4 cr.***
SBIG-289 Contemporary Science-Biology	***4 cr. (FWS)***
SBIG-201,202,203 General Biology	***4cr.***
SCHG-289 Contemporary Science-Chemistry	***4 cr. (FWS)***
SPSP-289 Contemporary Science-Physics	***4 cr. (FWS)***

'See page 118 for Liberal Arts requirements.

†See page 176 for policy on Physical Education.

Imaging and Photographic Technology

Andrew Davidhazy, Chairperson

The imaging and photographic technology curriculum has been designed to prepare students for entry into any of a variety of picture-making and non-picture-making positions in the broad field of scientific/technical photography, as distinct from providing highly specialized training for a specific position. At the same time, however, students develop expertise in a professional field of their choice by taking a sequence of six courses in one of eight areas of concentration.

Picture-making courses are included in all four years of the program, with a transition from a comprehensive foundation course in black-and-white photography through color photography and color printing, as well as television production, to more specialized courses in high-magnification photography, high-speed photography, and non-conventional imaging systems. These picture-making courses are balanced with courses in photographic technology, computers, mathematics, science, business and liberal arts. Two paid co-op work experiences and a senior project also are included.

Employment and co-op work experience statistics maintained by RIT's Office of Cooperative Education and Placement, as well as results of an industry survey done by the School of Photographic Arts and Sciences, indicate that there is a need for graduates with picture-making and photographic technology backgrounds for positions such as technical and sales representatives, photographic instrumentation, technical illustration, technical writing, scientific photography, audiovisual production, product development and testing, applied research, quality control and photographic lab supervision and management.

Yr	IMAGING & PHOTOGRAPHIC TECHNOLOGY	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	PPHT-201,202,203 Photography I	7	7	7
	PPHT-211,212,213 Materials & Processes of Photography	3	3	3
	PPHT-220 Survey of Imaging & Photographic Technology	0	0	1
	Mathematics			
	•SMAM-204 College Algebra	4		
	SMAM-214,215 Introductory Calculus		3	3
	"Liberal Arts	4	4	4
	TPhysical Education	0	0	0
2	Photographic Technology II			
	PPHT-301 Photographic Sensitometry	3		
	PPHT-302 Technical Photographic Chemistry		3	
	PPHT-303 Photographic Optics			3
	Color Photographic Systems			
	PPHT-311 Color Photography/Design	4		
	PPHT-312 Color Printing/Theory		4	
	PPHT-313 Color Measurement			4
	PPHT-321 Applied Computing for Photography	3		
	SPSP-211,212,213College Physics	3	3	3
	SPSP-271,272,273 College Physics Lab	1	1	1
	"Liberal Arts	4	4	4
	tPhysical Education	0	0	0
	Summer: Co-op (No.1)""			
3	'"Concentration Electives	4	4	4
	Photographic Technology III			
	PPHT-411 Preparation of Visuals	3		
	ICIC-421 Producing Audiovisual Presentations		4	
	PPHT-412 Photomacrography/Photomicrography			3
	PPHF-310M&Pofthe Moving Image II	2		
	PPHF-207 Intro, to Portable Video	4		
	ICSA-208 Introduction to Programming			4
	PPHM-430 Technical Writing	3		
	"Liberal Arts		8	4
	Summer: Co-op (No.2)			
4	'"Concentration Electives	4	4	4
	Photographic Technology IV			
	PPHT-501 High-Speed/Time-Lapse	3		
	PPHT-502 Introduction to Research	1		
	PPHT-503 Senior Project		3	
	PPHT-504 Survey of Nonconventional Imaging			3
	BBUB-430 Organizational Behavior	4		
	BBU- Business Elective			4
	"Liberal Arts	4	8	4
	"Senior Seminar (Liberal Arts)			2

•Waiver (with credit) by examination. Exemption (without credit) on recommendation of instructor.
"SeepagellB for Liberal Arts requirements.
'"Concentration course credits may vary from 3 to 5, but should total approximately 24. A minimum of 197 quarter credit hours are required for the BS degree.
""Co-op experiences may be scheduled during the school year as well but this may disrupt normal course schedule.
tSee page 176 for policy on Physical Education.
NOTE: Some courses are offered more than once during school year.

Concentration electives + (third and fourth years, imaging and photographic technology)

Students in the imaging and photographic technology program may pursue an area of concentration listed below. The areas consist of courses that are periodically reviewed by the department faculty. The concentrations are intended to serve as planning guides. The courses suggested provide substantial background within each specialty area. While students may complete all six concentration electives within one area, at least three courses from any list are required to constitute a major concentration area.

Photographic Instrumentation Concentration
ITEE-411 Electrical Principles for Design I
ITEE-412 Electrical Principles for Design II
PPHT-395 Photo Electronics Workshop
PPHT-401, 402, 403 Photo-instrumentation Applications Seminar
PPHT-412 Photomacrography/ Photomicrography
PPHT-501 High-Speed/Time-Lapse Photography
PPHT-504 Survey of Nonconventional Imaging
PPHT-421 Holography I
PPHT-422 Applications of Holography
PPHT-551 Special Topics, Rainbow , Holography
PPRT-402 Applications of Electronics to the Graphic Arts
PPHT-450 Photographic Scanning Systems
PPHB-421 Scanning Photo-macrography (With permission of instructor)

Film/Video
PPHF-201 Structuring the Moving Image
PPHF-202 Narrative Film Production
PPHF-203 Fiction & Dramatic Short Film Production
PPHF-311 Portable Video Production
PPHF-312 Studio and Documentary Video
PPHF-313 Electronic Field Production
PPHF-310 Materials & Proc. of the Moving Image II
PPHF-204, 205 Film History & Aesthetics
PPHF-207 Introduction to Portable Video I
PPHF-208 Introduction to Portable Video II
PPHF-324 Introduction to Animation

Business
BBUB-430 Organizational Behavior
BBUA-301 Financial Accounting
BBUA-302 Managerial Accounting
BBUB-315 Legal Environment of Business
BBUQ-334 Management Science
BBUB-455 Personnel & Human Resources Management
BBUM-463 Principles/Marketing
PPHM-410, 411, 412 Training and Supervision
PPRM-506 Business Law
PPRM-510 Personnel Relation II
PPRM-511 Labor Relations in Graphic Arts
PPRM-512 Collective Bargaining in Graphic Arts
PPRM-515 Legal Problems of Publishing

Graphic Arts
PPRT-591 Reproduction Photography
PPRT-311 Planning and Finishing
PPRT-213 Principles of Copy Preparation
PPRT-506 Electronic Color Imaging & Color Control
PPRM-320 Intro to Magazine Publishing Management
PPRT-315 Ink and Color
PPRT-406 Color Separation Systems
PPRM-420 Electronic Communication in Printing/Publishing I
PPRT-230 Printing Process Concepts
(PPRT-591 is the prerequisite for PPRT-406. PPRT-406 is the prerequisite for PPRT-506.)
(See Course Description Catalog for additional courses.) •

Photographic Processing and Finishing Management
PPHM-301 Production Processing & Finishing (Film Processing)
PPHM-302 Production Processing & Finishing (Custom Printing)
PPHM-303 Production Processing & Finishing (Automatic Printing)
PPHM-402 Photographic Process Control (Color Sensitometry)
PPHM-420 Applied Statistical Quality Control
PPHM-506 Theory of Corrective Color Printing
PPHM-599 Independent Study

Audiovisual Communications
ICIC-585 Producing Special Effects Slides
+ ICIC-421 Producing Audiovisual Presentations I
ICIC-422 Producing Audiovisual Presentations II
ICIC-489 Audio for Audiovisual Presentations
ICIC-580 Producing Multi-Image Presentations I
ICIC-510 Writing for Audiovisual Presentations
ICIC-571 Staging Audiovisual Presentations
ICIC-581 Producing Multi-Image Presentations
ICIC-586 Advanced Special Effects Slide Production

Still Photography and Color Printing
PPHT-410 Architectural Photography
PPHL-451, 452, 453 Portraiture
PPHT-341 Introduction to Corporate & Special Interest Publications
PPHT-404, 405, 406 Corporate & Special Interest Publications
PPHT-460 Special Effects Photography
PPHT-421 Holography
PPHT-425, 426, 427 Nature Photography
PPHT-444 Reversal Color Printing
PPHT-441 Introduction to Dye Transfer
PPHT-442 Advanced Dye Transfer I
PPHT-443 Advanced Dye Transfer II
PPHT-446 Advanced Color Printing I
PPHT-447 Advanced Color Printing II
PPHT-305[1] Portrait Retouching
PPHT-306 Commercial Retouching
PPHT-307 Basic Airbrushing

Science and Engineering
(Any combination of appropriate courses in the following areas)
Mathematics
SMAM-309 Elementary Statistics
SMAM-251, 252, 253 Calculus I, II, III
Physics
SPSP-311, 312, 313 University Physics I, II, III
Computers
ICSA-205 Computer Techniques
PPRM-301 Application-of Computers to the Graphic Arts
ICSA-208 Introduction to Programming
ICSA-210 Program Design & Validation (prerequisite: ICSP-208)
ICSA-410 Computer Concepts & Software Systems (prerequisite: ICSP-210)
ICSA-411 Data Communications & Computer Networks
Electricity & Electronics
ITEE-411 Electrical Princ./Design I
or
ITEE-310 Electricity
ITEE-412 Electrical Princ./Design II
or
ITEE-311 Electronics I
or
ITEE-312 Electronics II

Chemistry
SCHG-211, 212 Chemical Principles I, II
PPHS-409 Color Appearance and Technology (prerequisite: PPHT-313)
PPHS-541 Fundamentals of Optics (prerequisite: Calculus)
PPHS-543 Optical Engineering (prerequisite: PPHS-541)
PPHS-313 Introduction to Colorimetry
CTGT-217, 218, 219 Photographic Chemistry
PPHT-502 Introduction to Research
PPHT-503 Senior Project

Photographic Marketing Management

Offered jointly through the McGhee Chair by the College of Business and the College of Graphic Arts and Photography, RIT's program in photographic marketing is the only one of its kind in the country.

This rigorous program is designed to provide students with a thorough knowledge of the photographic process and a solid background in business administration with courses in economics, finance and marketing principles. The combination of work in these two disciplines prepares students for a multifaceted management-level career in photographic business. Opportunities for positions include those in customer service aspects of photofinishing and professional color laboratories and management positions with photographic manufacturers and photographic retailers. For further information, including transfer requirements, contact the College of Business.

Yr.	PHOTOGRAPHIC MARKETING MANAGEMENT, TYPICAL SCHEDULE	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	1016-225 Algebra tor Management Science	4			
	0511-301 Principles of Economics I	4			
	0105-201 Introduction to the Retail Industry		4		
	1016-226 Calculus for Management Science		4		
	0511 - 302 Principles of Economics II		4		
	0602-200 Survey of Computer Science			4	
	0101-301 Financial Accounting			4	
	"Liberal Arts (lower division core)	8	4	8	
	tPhysical Education	0	0	0	
2	0903-207,208,209 Still Photo I, II, III	3	3	3	
	0105-301 Retail Accounting and Merchandise Control . . .		4		
	0106-330 Data Analysis	4			
	0101 -302 Managerial Accounting	4			C
	0106-334 Management Science		4		0
	0101-319 Legal Environment of Business	4			0
	0102-312 Career Seminar			2	p
	•Liberal Arts (lower division core)		4	4	
	'Liberal Arts (upper division concentration)			8	
	tPhysical Education	0	0	0	
3	0903-211,212,213 Materials & Processes of Photography .	3	3	3	
	0104-441 Corporate Finance		4		
	0105-463 Principles of Marketing	4			C
	0105-401 Retail Store Operations & Management			4	0
	0106-401 Operations Management			4	0
	0102-430 Organizational Behavior			4	p
	'Liberal Arts (upper division concentration or elective)	8	8		
4	0106-505 Information Systems		4		
	0102-507 Business Environment	4			
	0920-311 Color Photography Design	4			
	0105-501 Senior Seminar in Retail Management			4	
	0920-312 Color Printing Theory		4		
	0905-320 Mechanics of Photographic Hardware I	4			
	0102-551 Policy & Strategy			4	
	0905-321 Mechanics of Photographic Hardware II		4		
	0905-310 Survey of Production Processing & Finishing . . .		2		
	Free Electives			4	
	'Liberal Arts (Senior Seminar)			2	

NOTE: Students are expected to complete co-op requirements during the junior and senior years in accordance with specific requirements for their major. General co-op guidelines for the College of Business are discussed on pages 8and9.

•See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Photographic Processing and Finishing Management

James Rice, Chairperson

This curriculum is designed to prepare individuals for management positions in the photographic processing and finishing industry. Students pursuing this course of study will learn: 1) the chemical, sensitometric and optical theory of the photographic process necessary to obtain quality results; 2) production procedures used with automated processing and finishing equipment required for large-scale operations; 3) procedures for setting up and operating a photofinishing laboratory, including training and supervising laboratory personnel and maintaining the equipment; 4) the theory and practice of process control and corrective color printing, including the use of computer programs in these areas; and 5) the business aspects of promoting and selling an economically produced quality product in a competitive market.

Students will spend considerable time in the school's fully equipped color processing and finishing laboratory to gain practical experience with production, quality control, and management techniques. They are also expected to serve a summer internship in an external photoprocessing laboratory.

The career objective of the four-year baccalaureate program is laboratory supervision and management. Students who elect to exit the program at the end of the second year, however, are awarded the AAS degree, and should qualify for area supervisory positions in photofinishing plants.

Professional electives
BBUA-302 Managerial Accounting
BBUA-421 Cost Accounting
BBUB-301 Business Law
BBUB-315 Legal Environment of Business
BBUB-455 Personnel and Human Resources Management
BBUQ-334 Management Science
BBUM-463 Principles/Marketing
BBUF-441 Corporate Finance
GLLC-402 Conference Techniques

Yr.	PHOTOGRAPHIC PROCESSING AND FINISHING MANAGEMENT	Qtr. Credit Hours		
		FALL	WTR.	SPG.
	PPHT-211,212,213 Materials & Processes	3	3	3
	SMAM-204 College Algebra and Trigonometry	4		
	ICSS-200 Survey of Computer Science		4	
	PPHT-311 Color Photography/Design	4		
	PPHT-312 Color Printing/Theory		4	
1	PPHM-430 Technical Writing			3
	PPHM-204 Orientation to production Photo Processing & Finishing	1		
	"Liberal Arts (Core)	4	4	8
	Education Electives	0	0	0
	""PPHM-301 Film Processing	4		
	""PPHM-302 Automated Printing		4	
	""PPHM-303 Custom and Professional Finishing			4
2	PPHM-313,314,315 Electricity and Electronics	4	4	4
	#Professional Elective	4	4	4
	"Liberal Arts (Core)	4	4	4
	:fPhysical Education Electives	0	0	0
	PPHM-401,402 Photographic Process Control	4	4	
	PPHM-410,411,412 Training and Supervision	4	4	4
	PPH M-420 Applied Statistical Qualty Control			3
3	SMAM-319 Data Analysis		4	
	BBUB-430 Organizational Behavior	4		
	"Liberal Arts (Concentration)	4	4	8
	PPHM-506 Theory of Corrective Color Printing		2	
	Summer Internship			
	BBUA-301 Financial Accounting	4		
	BBUA-302 Managerial Accounting		4	
	PPHM-510 Finishing Lab Operations Management	4		
	BBUM-463 Principles of Marketing			4
	Professional Electives	4	4	4
4	PPHM-520 Operation, Care & Maintenance of Photofinishing Equipment		1	
	PPHM-501,502,503 Senior Seminar	0	0	1
	"Liberal Arts Elective	4	4	4
	"Liberal Arts (Senior Seminar & Project)			2

"See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
•"One-third of the second year PPHM class will take each course each *quarter.*
#Approval of chairman required.

GLLC-501 Effective Speaking
PPHM-511, 512, 513 Advanced Machine Processing
PPHM-599 Independent Study
PPHT-441, 442, 443 Advanced Color Printing
SCHG-205, 206, 207 Chemical Principles Labs
SCHG-211, 212, 213 Chemistry

Others to be selected in consultation with advisors.

Professional Photographic Illustration

Owen Butler, Chairperson
Department of Applied Photography

Contemporary/Illustrative/ Commercial Photography Option (studio photography)
or
Narrative/Documentary/Editorial Photography Option (photojournalism)

The curriculum leading to a bachelor of fine arts degree in professional photographic illustration is planned to prepare the student for those areas of photography which require the solving of visual communication problems with a sound technical base. Students are encouraged to develop innovative and individualized responses to visual problems; they are expected to become sensitive to contemporary graphic design and to visual aspects of their society; they are asked to be perceptive and responsible citizens of an evolving society.

Career opportunities

Photo students who elect the BFA program may produce advertising photography for magazines, direct mail pieces, posters, billboards, and packages. They may produce editorial photography magazine illustrations or illustrate brochures, annual reports, and other visual materials for business, government, and educational institutions. They are qualified to function as working newspaper and magazine photographers or commercial studio photographers.

Graduates might enter an array of related professional activities, such as picture editing and research, studio management or function as a photographic representative.

Areas of concentration

The bachelor of fine arts program in professional photographic illustration is subdivided into three areas of concentration, each of which is varied enough to provide the student with a broad-based photographic education. Each is also flexible enough in approach to provide the student who so desires to select those courses that provide for and best suit his or her particular needs. The first two years of the applied program are common for the fine art photography student, commercial studio and photojournalism student. After the second year the student plans a program that will fulfill his or her objectives. With an advisor, a tentative two-year program is planned for available courses that will meet the professional BFA degree requirements.

Yr.	PROFESSIONAL PHOTOGRAPHIC ILLUSTRATION FOUNDATION YEARS	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	PPHL-201,202,203 Applied Photo I	7	7	7
	PPHL-205,206, Creative Problems	3	3	
	PPHL-207 Intro, to Color			3
	FADF-221,222,223 Design for Photo I	2	2	2
	'Liberal Arts (Core)	4	4	4
	Education Elective	0	0	0
2†	PPHL-311,312,313 Applied Photo II	5	5	5
	PPHA-301,302,303 History & Aesthetics of Photo	3	3	3
	FADF-321,322, 323 Design for Photo II	2	2	2
	PPHT-211,212,213 Materials & Processes of Photography	3	A3	3
	'(.iberal Arts (Core)	4	4	4
	PPHL-315 Colloquia		1	
	Education Elective	0	0	0

tUpon successful completion of the second year, the associate in applied science degree is awarded.

Yr.	BFA IN PROFESSIONAL PHOTOGRAPHIC ILLUSTRATION WITH A MAJOR IN CONTEMPORARY/ILLUSTRATIVE/COMMERCIAL PHOTOGRAPHY	Qtr. Credit Hours		
		FALL	WTR.	SPG.
3	PPHL-441,442,443 Contem/Illus/Commer I	5	5	5
	"Photo Electives	4	4	4
	FSCF-225,226,227 Art & Civilization	3	3	3
	"Liberal Arts (Concentration)	4	4	4
4	PPHL-541.542,543 Contem/Illus/Commer II	5	5	5
		3-4	3-4	3-4
	PPHL-505 History of Applied Photography	3		
	"Liberal Arts Electives	4	4	4
	"Liberal Arts (Senior Seminar)			2
	PPHL-461 Prof. Operations Management		4	

Yr.	BFA IN PROFESSIONAL PHOTOGRAPHIC ILLUSTRATION WITH A MAJOR IN NARRATIVE/EDITORIAL PHOTOGRAPHY	Qtr/Credit Hours		
		FALL	WTR.	SPG.
3	PPHL-416,417,418 Narr. Docum. Edit. I	5	5	5
	"Photo Electives	4	4	4
	FSCF-225,226,227 Art & Civilization	3	3	3
	"Liberal Arts (Concentration)	4	4	4
4	PPHL-516,517,518 Narr. Docum. Edit II	5	5	5
	"Photo Electives	3-4	3-4	3-4
	PPHL-505 History of Applied Photography	3		
	"Liberal Arts Electives	4	4	4
	"Liberal Arts (Senior Seminar)			2
	PPHL-461 Prof. Operations Management		4	

"A list of electives is on next page.
'Seepage 118 for Liberal Arts requirements.
tSee page \76 for policy on Physical Education.

Electives

PPHF-207, 208 Introduction to Portable Video
PPHF-204, 205, 206 Film History and Aesthetics
*PPHF-201, 203 Film Production I, II
PPHF-324, 325 Introduction to / Animation I, II
"PPHF-411, 412, 413 Visual & Commercial Film Production
•PPHF-551, 552, 553 Special Topics (when offered)
•PPHF-599 Independent Study
•PPHL-437, 438, 439 Visual Communication Workshops
•PPHL-551, 552, 553 Special Topics (when offered)
•PPHL-599 Independent Study
PPHM-301, 302, 303 Production Process & Finishing
PPHM-401, 402, 403 Photo Process Control
PPHM-510 Finishing & Lab Operating Management
PPHM-511, 512, 513 Advanced Production Processing & Finishing
'PPHM-500 Independent Study
*PPHT-541, 542, 543 Basic Portrait Photography
PIMG-201, 202, 203 Photography for Scientists/Engineers
PPRM-420 Electronic Communication in Printing/Publishing I

PPRT-230 Printing Process Concepts
PPRT-311 Planning and Finishing
PPRT-213 Principles of Copy Preparation
PPRT-506 Electronic Color Imaging & Color Control
PPRM-320 Introduction to Magazine Publishing Management
PPRT-315 Ink and Color
PPRT-406 Color Separation Systems
PPHT-301 Photographic Sensitometry
PPHT-302 Photographic Chemistry
PPHT-303 Photographic Optics
PPHT-305 Portrait Retouching
PPHT-306 Commercial Retouching
PPHT-425, 426, 427 Nature Photography
PPHT-307 Basic Airbrushing
PPHT-311 Color Photography Design
PPHT-312 Color Printing/Theory
*PPHT-313 Color Measurements
*PPHT-412 Photomicrography/ Photomacrography
PPHT-421 Basic Holography
*PPHT-422 Applications of Holography
•PPHT-431 Architectural Photography
PPHT-441 Introduction to Dye Transfer
•PPHT-442 Advanced Dye Transfer I
•PPHT-443 Advanced Dye Transfer II
PPHT-444 Reversal Color Printing
*PPHT-551 Special Topics (when offered)
"PPHT-599 Independent Study
PPHA-401, 402, 403 Photo as a Fine Art I
'PPHA-501, 502, 503 Photo as a Fine Art II
•PPHA-506, 507, 508 Photo Media Workshop
PPHA-521, 522, 523 Color Photo Workshop
PPHA-531 Picture Researching
PPHA-535 Gallery Management
PPHA-538 Photo Careers Seminar
'PPHA-551 Special Topics
"PPHA-560 Semiotics & Photography
PPRT-591 Reproduction Photography
•ICIC-401 Message Design
"ICIC-430 Audiovisual Presentation Design
"ICIC-489 Audio for A-V Presentations
*ICIC-440 Audiovisual Program Design
"ICIC-424 Visual Production Technique
•ICIC-450 Audiovisual Design II
"ICIC-580 Producing Multi-image Presentations I
•ICIC-581 Producing Multi-image Presentations II
•ICIC-583 Advanced Multi-image Project
•ICIC-585 Producing Special Effect Slides

Yr.	FINE ART PHOTOGRAPHY MAJOR	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	**First Year**			
	PPHL-201,202,203 Photo I, II III	7	7	7
	PPHL-205, 206 Creative Problems	3	3	
	PPHL-207 Intro, to Color			3
	FADF-221,222,223 Design for Photo I	2	2	2
	"Liberal Arts (Core)	4	4	4
	‡Physical Education	0	0	0
2	**Second Year**			
	PPHA-313 Introduction to Fine Art Photography	4		
	PPHA-301,302,303 History & Aesthetics of Photography	3	3	3
	PPHT-312 Color Printing & Theory	4		
	PPHA-323 Photo Media Survey			3
	ICSA-200 Survey of Computer Science		4	
	Visual Imaging electives (or Materials & Processes)	3	3-7	3-8
	"Liberal Arts (Core)	4	4	4
	tPhysical Education	0	0	0
3	**Third Year***			
	PPHA-401,402,403 Photography as a Fine Art I	4	4	4
	FSCF-225,226,227 Art & Civilization	3	3	3
	PPHA 411,412,413 Contemporary Issues	2	2	2
	"Liberal Arts (concentration	4	4	4
	Visual Imaging Electives	3-4	3-4	3-4
4	**Fourth Year**			
	PPHA-501,502,503 Photography as a Fine Art III	4	4	4
	PPHA-525 Archival Photographies: Processing, Display & Storage		4	
	PPHA-531 Picture Researching			4
	FSCF-380 Contemporary Art	3		
	"Liberal Arts (electives)	4	4	4
	"Liberal Arts (Senior Seminar)			2
	Visual Imaging electives	3-4	3-4	3-4

'Students wishing to do so can elect to take their third year off campus in this country or abroad.
'Seepage 118 for Liberal Arts requirements,
tSee page 176 for policy on Physical Education.

ICIC-205 Computer Techniques
ICSA-200 Survey of Computer Science
•Need department or faculty approval to enroll

Other courses may be used as professional electives with written permission from the applied department chairman.

Fine Art Photography Option

Ken White, Chairperson

If your interests are in art and photography, you should consider fine art photography as your major. Our program is designed to encourage and facilitate your artistic development, sensitivity, and your uniqueness as a potential visual artist. Our purpose is not to train you for a specific job in photography, but rather to provide a career path that will provide you with a rich potential for growth and change, and for a lifetime of interesting and challenging work in photography and related fields.

Career opportunities
Graduates of our fine art photography program have found careers in a variety of areas: exhibiting artists, picture editors, picture researchers, photographer's representatives, photographic archivists, museum and gallery staff, audiovisual specialists, self-employed photographers, color printers, and film video production. Some students choose to pursue graduate work and earn an MA or MFA in photography.

Visual imaging electives
The following courses are approved visual imaging electives.
PPHA-506, 507, 508 Photo Media Workshop
PPHA-521, 522, 523 Color Photography Workshop
PPHA-531 Picture Researching
PPHA-535 Gallery Management
PPHA-538 Careers in Photography
PPHA-551, 552, 553 Special Topics
PPHA-560 Semiotics and Advertising Photography
PPHA-599 Independent Study
PPHG-720 Photographic Workshop
PPHG-756 Zone System
PPHG-760 Perception and Photography
PPHG-767, 768, 769 Contemporary Issues
PPHF-207, 208 Introduction to Portable Video
PPHF-201, 202, 203 Conceptual Moving Image Production
PPHF-324, 325 Introduction to Animation I & II
PPHT-425, 426, 427 Nature Photography
PPHT-441, 442, 443 Dye Transfer
PPHT-211, 212, 213 Materials and Processes of Photography

(Upon approval other visual imaging courses may be taken. These include the variety of different media for recording visual images: drawing, screen printing, printing, painting, graphic design, film/video, audiovisual, computer imaging. Also included are the three-dimensional arts such as sculpture, ceramics, metal, wood, glass, and dance.)

Transfer students
Students in college and wishing to transfer into our program can do so if they are studying photography or related imaging arts areas such as painting, graphic design, communication arts, audio visual, film and television. Call or write the chairperson for specific information.

If you would like a personal interview, tour, and an opportunity to visit classes and to talk with some of our students, call Ken White, at (716) 475-2616. Collect calls are accepted.

Yr.	IMAGING SCIENCE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	PIMG-231 Survey of Imaging Science	3		
	PIMG-232 Imaging Science Seminar		1	
	PIMG-233 Introduction to Imaging Science			2
	PIMG-241 Intro, to VAX/VMS Fortran	2		
	SCHG-211,212 Chemical Principles I, II	3	3	
	SCHG-205,206 Chemical Principles I, II Lab	1	1	
	SCHG-213 Intro, to Organic Chemistry			3
	SCHG-207 Intro, to Organic Chemistry Lab			1
	SPSP-311,312 University Physics		4	4
	SMAM-251,252,253 Calculus	4	4	4
	'Liberal Arts (Core)	4	4	4
	tPhysical Education Elective	0	0	0
2†	PIMG-351,352 Mathematics and Computation for Imaging Science I, II		4	4
	PIMG-361 Geometrical Optics	4		
	PIMG-362 Physical Optics		4	
	PIMG-365 Chemical Imaging Systems			4
	PIMG-345 Interaction Between Light & Matter			4
	SMAM-305 Calculus IV	4		
	SPSP-313 University Physics	4		
	SPSP-314 Introduction to Modem Physics		4	
	'Liberal Arts (Core)	4	4	4
	tPhysical Education Elective	0	0	0
3	PIMG-461 Radiometry	4		
	PIMG-462 Vision, Color & Psychophysics		4	
	PIMG-463 Macroscopic Imaging Systems Analysis		4	
	PIMG-446,447 Statistics I, II			3
	SPSP- Electronics Measurement		4	
	"Liberal Arts Courses	8	4	4
4	PIMG-501 Research Practices & Technical Communications	3		
	PIMG-502,503 Sr. Project		3	3
	PIMG-566 Imaging Systems Analysis	3		
	PIMG-567 Quantum Limitations of Imaging Processes		3	
	PIMG-568 Advanced Imaging Systems Analysis			3
	"Liberal Arts Upper Level Electives	4	4	4
	"Liberal Arts Senior Seminar			2
	Professional Elective (selected from undergraduate elective list)	To bring undergraduate total to 194		

'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
fUpon successful completion of the second year, the associate in applied science degme is awarded.

Center for Imaging Science

Dr. Rodney Shaw, Director

Students in RIT's Center for Imaging Science program study the applications of physics, computer science, chemistry and mathematics to the formation, recording and perception of images. Design of imaging systems, the evaluation of the images they produce and the application of those systems to a broad range of careers in industry, business and government are all part of the imaging science curriculum. Concentrations include digital image processing, remote sensing, photographic chemistry, optics, and image evaluation. In addition, concentrations in color science, appearance, and technology are offered in the Munsell Color Science Laboratory within the Center for Itnaging Science. Both theoretical studies and practical application of technologies are integral parts of the Imaging Science program.

The foundation for study in imaging science is grounded in the physical and mathematical sciences. Built on this background are advanced studies in imaging principles, chemistry, optics and optical instrumentation, color science and technology, photometry and radiometry, image microstructure, analysis and evaluation of imaging systems, digital image processing and remote sensing.

The imaging science faculty are deeply committed professionals who divide their time between teaching and the pursuit of technological advances. Additionally, adjunct faculty members from local industry add their experience to the students' education. The center provides research support and performs contract work for industry and government. This research ensures that students are exposed to the latest developments in this rapidly expanding field.

RIT's Center for Imaging Science offers the only undergraduate program of its kind in the nation. Established in 1985 in response to a growing need for highly qualified imaging scientists and engineers, the center is an outgrowth of the distinguished Imaging and Photographic Science program, which demonstrates RIT's ability to provide quality education in this field. Career opportunities exist throughout the country including areas such as aerospace technology, office information systems, information handling, microelectronics, scientific instrumentation, graphic arts, and photographic materials and systems. Graduates are employed in industrial and governmental research, marketing and technical representation.

The Center for Imaging Science offers three programs leading to both undergraduate and graduate degrees: a four-year bachelor of science degree, and two master of science programs for students with a bachelor's degree in science or engineering. In addition to the MS degree in Imaging Science, the center also offers a master of science degree in color science, appearance and technology. This graduate program is broadly interdisciplinary encompassing physics, chemistry, physiology, and psychology and is designed for students whose undergraduate majors pertain to the quantitative description of color. Applicants without adequate undergraduate work in related sciences must make up foundation courses before matriculating into the program.

Transfer programs are available for the BS program in imaging science. Students with satisfactory credits in mathematics, chemistry and physics may transfer into the program beginning with the second or third year by taking a transfer program during the Summer Quarter.

Second-year entry
(Transfer credit requirements):
Normally a minimum of 42 quarter hour credits are required to transfer into the Imaging Science BS program at this level. These should include: 8 credits of general chemistry (including lab), 4 credits of introductory organic chemistry, 12 credits in differential and integral calculus, 6 credits in physics, and 12 credits in liberal arts. The student also must complete the summer course, PIMG-220, Introduction to Imaging Science I, with a 'C' grade or better.

Third-year entry
(Transfer credit requirements):
A minimum of 80 quarter credits of which 8 are credits in a general chemistry course (including lab); 4 credits in an introductory organic chemistry course; 12 credits in differential and integral calculus; 8 credits in advanced mathematics including differential equations; 24 credits in liberal arts; 15 credits in university physics (including lab); 3 credits in a computer course; plus 6 additional credits in math or science. The students also must complete the 10-week intensive summer course, PIMG-220 and 225, Introduction to Imaging Science I and II, with a 'C' grade or better.

In recognition of the department's belief that much degree-relevant learning in imaging science can take place outside the Institute's classrooms, all undergraduates are encouraged to acquire summer imaging science industrial experience during their program at RIT.

Four-year program: bachelor of science in imaging science
The course content in this program is typical of science and engineering programs. The first two years contain fundamental courses in mathematics, chemistry, and physics. The student simultaneously applies these fundamentals to studies in imaging science. The imaging science core program then continues with courses in radiometry, the structure of images, color and vision, and methods of photo-engineering systems. Third- and fourth-year students select elective courses in imaging and photo-engineering, science and mathematics. A fourth-year undergraduate research project is required.

School of Printing Management and Sciences

Miles F. Southworth, Director

The School of Printing Management and Sciences is the world's largest school specifically dedicated to developing managers, system engineers, newspaper production managers and computer scientists for the newspaper, magazine and printing industries. It enjoys this position of leadership because of an involved and dedicated faculty, its up-to-date programs, laboratory facilities which represent the state-of-the-art and the great number of successful graduates. More than 500 students are enrolled in its bachelor's and master's degree programs.

The school's 25 laboratories represent the latest in technological advances in all areas of the printing industry. They occupy approximately 125,000 square feet, and the value of the printing equipment installed in these laboratories is over $30 million. An installation of this magnitude can be possible only through the outstanding support received from the various printing equipment manufacturers and the printing industry in general. More than 70 courses in printing technology and management are offered in the school, from which students take one-half of their course work. Courses in engineering, computer science, business, mathematics, science and liberal arts are taken in close cooperation with the other colleges at RIT-

Imaging Section

The capability to create and manipulate images is fundamental to every method of graphic communication. Through course work in the imaging section, printing students have the opportunity to study and gain first-hand experience with both conventional and the emerging digital electronic imaging systems. Five unique labs house state-of-the-art equipment for composition systems, reproduction photography, image assembly, and electronic color imaging. This combination of unparalleled facilities and excellent faculty will prepare students who choose to concentrate their studies in this section for positions as pre-press manager, quality control supervisor, color reproduction specialist, technical service representative, customer service representative, sales and other marketing functions in the graphic arts industry.

Students may choose from several concentrations in the Imaging Section. Below is one example.

Color reproduction concentration
Image Capture & Conversion
Tone Reproduction and Halftone Analysis
Techniques of Image Assembly
Lithographic Process
Color Separation System
Quality Control in the Graphic Arts
Electronic Imaging and Color Control

Press Section

Walter G. Home, Staff Chairperson

The production segment of the industry is the core area of most printing facilities. All managers in the industry, from design through delivery, as well as in non-production areas, need a firm grasp of this core area if their decisions are to be valuable. This is the home area for the production manager in plants producing books, newspapers, forms or commercial printing. For these reasons, the Press Section offers courses in all the major printing processes, encompassing flexography, gravure, lithography, screen printing and web offset. These courses include the printing plates, gravure cylinders, and screen imaging concepts for each process. Another vital part of this area includes courses in ink and color, and planning and finishing.

This section enables the student to specialize in one of six concentrations. Some elective courses include flex ography, gravure, lithography, and package printing.

Below is one example of a concentration:

Gravure process concentration
Gravure Process
Advanced Gravure
Color Separation
Quality Control in the Graphic Arts
Labor Relations in the Graphic Arts
Work Measurement & Methods Analysis
Packaging Materials I

Management Section

Hugh Fox, Staff Chairperson

To facilitate a high-level decision-making process, management personnel in the graphic arts need to have a clear understanding of the interrelationships that exist among the marketing, financial, personnel, and production segments of the industry. To this end, the Management Section offers course work in these areas. In collaboration with other sections, the Management Section provides the means for shaping future managers in the graphic arts.

Production management concentration
Estimating I
Printing Production Management
Economics of Production Management
Personnel Relations or Collective Bargaining
Entrepreneurship (to be established)
Work Measurement and Methods Analysis (to be established)

Computer applications: Computers are of increasing importance to the printer as they can perform the usual business data-processing tasks as well as more specialized applications ranging from typesetting to process control. This sequence is designed to provide students with a basic understanding of computers and their potential in production management.

Financial management: This sequence utilizes courses in both the School of Printing Management and Sciences and the College of Business. Students prepare themselves for the financial aspects of managing a graphic arts business.

Personnel management: Drawing heavily on courses in the College of Liberal Arts, this sequence prepares students for positions in personnel management, labor relations, and other positions where the ability to work closely with individuals is of prime importance.

Production management: Students in this sequence are prepared to enter all phases of printing dealing with production problems in the commercial printing industry as well as in the newspaper, book, and magazine publishing industries. Management positions evolving from this sequence are that of scheduler, assistant production manager, and production manager.

Sales-marketing: This sequence prepares students for positions in printing sales and marketing and printing equipment or supply sales, as well as positions as technical representatives for graphic arts supply firms and as printing buyers and brokers.

Career opportunities
The graduate with a BS degree in printing has a wide variety of technical and management positions available in printing and related industries. Among these are positions in administration and general management, production and quality control, sales, estimating, cost and financial control, process and plant development, graphic design, newspaper production management, and graphic arts research. A variety of positions in commercial printing, packaging, and service industries and in the book, newspaper, and magazine publishing industries also are available to graduates.

The two-year portion of the program is for those who wish to enter employment after two years of college study. Graduates of this program obtain employment as assistants in such classifications as estimating, production control, specification writing, purchasing, copy preparation, typography and layout, and sales.

Special requirements for admission
Overall requirements for admission are given in the general information section of this bulletin. In addition, it is important that an applicant have an interest in printing courses, which may be shown by success in high school printing courses, by extracurricular activities in connection with a school newspaper or yearbook, by employment in a printing establishment, or by gaining an idea of the activities and opportunities of the field through investigation of personal associations. While high school graduation is stated as a basic requirement for admission, with intermediate algebra and one year of science as specific prerequisites, it is highly recommended that students take as much mathematics and science as possible in high school.

Math/science sequences
Each student must take 13 or 14 credits of college mathematics as required by the School of Printing Management and Sciences. Nine or 10 of these mathematics credits are earned in the freshman year, and placement will be determined through testing and a review of the student's academic background.

With departmental approval a student may substitute a higher level math sequence. Preparatory math courses will be available if the need for them exists.

The first-year science sequence must be Chemical Foundations I, II, III (SCHG-281, 282, 283) and the accompanying lab (SCHG-285, 286, 287). The second-year science sequence must be College Physics (SPSP-211, 212, 213). However, with departmental approval students can substitute a higher level chemistry or physics sequence.

Liberal arts electives
In general, the program requires that the student take at least one course per quarter from this area, which includes such subjects as economics, psychology, logic, ethics, language, communications, literature, and fine arts appreciation.

Professional electives
These are usually selected from the printing management and technology electives listed below, but many also include courses from the College of Business or Engineering or other colleges in the Institute if the subject matter is approved as relevant to the student's needs.

The following electives supplement required courses. Students elect courses to suit their individual interests and objectives and to meet the credit requirements of the printing program. Selection is subject to prerequisite requirements and availability of courses.

Printing electives

Printing Management
PPRM-320 Intro to Magazine Publishing & Management (Cr. 3)
PPRM-402 Estimating II (Cr. 4)
PPRM-404 Printing Production Management II (Cr. 4)
PPRM-502 Financial Controls II (Cr. 4)
PPRM-506 Business Law (Cr. 3)
PPRM-507 Computer Estimating Workshop (Cr. 4)
PPRM-509 Economics of Production Management (Cr. 4)
PPRM-510 Personnel Relations II (Cr. 4)
PPRM-511 Labor Relations in Graphic Arts (Cr. 4)

Printing Technology
PPRT-210 Newspaper Presses
PPRT-213 Principles of Copy Preparation (Cr. 3)
PPRT-301 Typography II (Cr. 4)
PPRT-303 Layout and Printing Design (Cr. 4)
PPRT-306 Tone Reproduction and Halftone Analysis (Cr. 3)
PPRT-308 Litho Press Problems (Cr. 4)
PPRT-309 Screen Printing II (Cr. 3)
PPRT-313 Copy Preparation (Cr. 4)
PPRT-314 Advanced Flexography (Cr. 3)
PPRT-315 Ink and Color (Cr. 4)
PPRT-317 Calligraphic Forms (Cr. 3)
PPRT-319 Newspaper Design (Cr. 3)
PPRT-320 Newspaper Production I (Cr. 3)
PPRT-321 Web Offset (Cr. 3) ,
PPRT-322 Circulation and Mailrooms (Cr. 3)
PPRT-329 Introduction to Book Design (Cr. 3)
PPRT-330 Newspaper Production II (Cr. 3)
PPRT-333 Introduction to Book Production (Cr. 3)
PPRT-335 The Printed Book in America (Cr. 3)
PPRT-401 Typographic Workshop (Cr. 4)
PPRT-403 Layout and Printing Design (Cr. 4)
PPRT-406 Color Separation Systems (Cr. 3)
PPRT-500 Quality Control in the Graphic Arts (Cr. 3)
PPRT-501 Development of Printing Types (Cr. 3)
PPRT-506 Electronic Imaging and Color Control (Cr. 3)
Other electives to be selected in consultation with advisors.

Printing Systems and Engineering

Walter A. Campbell, Coordinator

The business of graphic communications reproduction has seen more changes in technology during the last two decades than it did during previous centuries. Electronics has become important, more pervasive than chemistry was when lithography was developed. Computers are used in both production and management.

Although printing has long been one of America's largest industries, today many printing firms are moving further into other forms of communications. Those that remain independent need to consider how they fit into graphic communications systems, as well as how to use the new technologies that are available for printing.

Few industries use the variety of processes and alternative techniques that graphic communications reproduction does. Almost every printing operation can be done by hand-craft methods, machine assistance, or full automation. Each technique has advantages to offer in particular circumstances and effective managers need to understand both how and why a particular technological option might fit their needs.

The Printing Systems and Engineering program educates young men and women to meet those challenges and become the movers and shapers of the graphic reproduction industries in the coming decades.

Yr.	PRINTING SYSTEMS AND ENGINEERING PROGRAM	Qtr. Credit Hours		
		FALL	WTR.	SPG.
	A program combining courses in engineering and printing that provides favorable transfer arrangements from math-science based programs.			
	PPRM-403 Printing Production Management	3		
	PPRT-213 Principles of Copy Preparation	3		
	Professional Electives		6	6
	SCHG-208,209 College Chemistry	4		4
1	SMAM-251,252,253 Calculus	4	4	4
	"Liberal Arts (English Composition)	4		
	"Liberal Arts (Core)		8	4
	tPhysical Education Electives	**0**	**0**	**0**
	EIEI-202 Computing for Industrial Engineering		4	
	PPRM-502 Financial Controls II			4
	PPRM-511 Labor Relations in the Graphic Arts	4		
2	SMAM-305 Calculus IV	4		
	SMAM-351,352 Probability, Applied Statistics		4	4
	SPSP-311,312,313 University Physics	4	4	4
	SPSP-375,376,377 University Physics Lab	1	1	1
	"Liberal Arts (Core)_	4	4	4
	tPhysical Education Electives	**0**	**0**	**0**
		FALL WTR.		**SPG. SMR.**
	EIEI-401 Introduction to Operations Research I	4		
	EIEI-420 Work Measurement & Analysis I	4		
	PPRM-201 Introduction to Technical Writing	3		
	"Liberal Arts (Concentration)	4		
3	EIEI-415 Human Factors I			4
	EIEI-422 Systems & Facilities Planning			4
	Professional Elective			3
	"Liberal Arts (Concentration			4
	PPRM-401 Estimating I	3		
	PPRT-315 Ink and Color	4		
	Professional Elective	3		
4	"Liberal Arts (Concentration	4		
	EIEI-503 Simulation			4
	EIEI-511 Applied Statistics II			4
	EIEI-550 Safety Engineering			4
	"Liberal Arts (Elective)			4
	PPRM-000 Printing Theory	4		
	Professional Electives	6		
	"Liberal Arts (Elective)	4		
	Liberal Arts (Senior Seminar)	2		
5	EIEI-482 Production Control			4
	PPRM-415 Advanced Ink and Color			4
	Professional Elective			3
	"Liberal Arts (Elective)			4

"See page 118 for Liberal Arts requirements.
‡See page 176 for policy on Physical Education.

The curriculum in printing systems and engineering features strong courses in both printing and industrial engineering. Printing courses provide depth and breadth in technology as well as important studies in managing and working with people. Industrial engineering courses deed with design and installation of integrated systems of people, materials and equipment. RIT's industrial engineering courses heavily involve computer applications for such things as plant layout, process development and control of manufacturing systems with robots and conveyors. Printing systems and engineering students become experts in understanding and using computers in both manufacturing and management. Elective courses meet students' individual interests. Importantly, half of the credits required for this degree are^ in liberal arts, mathematics and science.

Students attracted to this program enjoy college preparatory mathematics and science in high school. Applicants must meet admission requirements of the RIT College of Engineering as well as those of the School of Printing Management and Sciences. These include elementary and intermediate algebra, plane geometry, trigonometry, physics and chemistry. Most applicants have four years of high school mathematics.

Cooperative employment for at least four quarters is required in this program. Students may make employment arrangements through their co-op coordinator in RIT's Office of Cooperative Education and Placement.

Job prospects after graduation include not only positions in the printing industrial engineering specialty area but also all positions open to any other School of Printing Management and Sciences graduate, except for those specializing in art and design, and many in the general field of industrial engineering. More than 10,000 printing companies in America need the services of printing systems and engineering specialists. Graduates of the program have started their careers in printing with above-average salaries.

The demand for educated and experienced individuals in the field of printing systems and engineering exceeds the number of graduates in this program.

Transfer programs

Transfers into the program from junior college engineering science programs or comparable majors are encouraged. Courses that are acceptable for industrial engineering programs are generally acceptable for this program but students without adequate course work in printing may want to take Summer Session courses at RIT before beginning the program's third year.

Newspaper Production Management

Dr. Robert G. Hacker, Coordinator

The printing and publishing industries are undergoing dynamic changes in technology. Within the newspaper industry changes are particularly drastic, completely altering how things are accomplished. In addition, advances in technology and market penetration of related information-handling systems result in greater competition in the areas of reader interest and advertising appeal. These advances have made it imperative to alter not only the way in which a newspaper is printed and distributed, but also the very method by which the information is prepared and processed—perhaps even what will be produced. The earlier distinctions between editorial, advertising and production blur as production becomes a function of advertising and editorial preparation, a direction enveloping previously distinct functions as well. These trends will result in the integration of these departments into a single entity utilizing a computer system to handle, transmit, and process information and then to control production and delivery.

This new approach requires new abilities and expertise of the people who would steer this changing industry. Graduates of the newspaper production management program will have to compete with the existing pools of talent and expertise as the functions of production merge with those of other departments.

They must be prepared in both the new technology and in the ability to steer existing manpower and management systems through potentially stormy change to a useful and profitable position in the marketplace. The revolution in this industry points to the need for a new person to deal with the technological and managerial problems of such change. This program is intended to fulfill the developing industry need for such people. As its name implies, the program concentrates on those courses that have been most helpful to graduates particularly interested in careers in newspaper production management.

Career opportunities

The graduate with a BS degree in newspaper production management has numerous career choices within the newspaper industry. Many young people find entry positions as production assistants, assistant production managers, assistant business managers, technical specialists with suppliers and computer specialists. These can lead to positions of production director, director of data processing, operations director, business manager, quality control manager and publishers. All of these positions present a distinct challenge in an industry undergoing a vast technological change.

Requirements for admission

General requirements for admission are given in the general information section of this bulletin. In addition, it is highly desirable that an applicant have a deep interest in newspaper management, which can be shown by success in working on a school newspaper, working for a daily or weekly newspaper or by a general interest in the mass media.

High-school graduation is a requirement for admission along with course work in elementary algebra, trigonometry, intermediate algebra, physics or chemistry. Preference is given to those applicants who have had additional work in mathematics, physics or chemistry. The entrance requirements and general program scope are similar to those in the printing program. It requires course work aimed at the newspaper industry, rather than the printing industry, in general.

Yr.	NEWSPAPER PRODUCTION MANAGEMENT PROGRAM	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	PPRT-230 Printing Process Concepts	4		
	PPRT-250 Concepts of Design & Typography		4	
	PPRT-270 Prepress Imaging Concepts			4
	SMAM-225 Algebra for Management Science	4		
	SMAM-226 Calculus for Management Science		4	
	SMAM-319 Data Analysis			4
	tSMAM-OOO Trigonometric Topics			1
	SCHG-281 Chemistry.		4	
	SCHG-282 Chemistry			4
	•Liberal Arts (English Composition)	4		
	'Liberal Arts (Core)	4	**4**	4
	PPRM-205 Newspaper Seminar	1	1	1
2	PPRM-240 Printing Financial Controls OR	4		
	BBAU-301 Financial Accounting PPRM-260 Printing Planning Concepts OR		4	
	'"BBUM-280 Principles of Marketing PPRM-280 Printing Management Leadership Concepts OR			4
	""BBUB-430 Organizational Behavior			
	PPRM-261 Standard Software Packages	2		
	PPRT-319 Newspaper Design	3		
	PPRT-262 Technical Writing I		2	
	PPRT-263 Technical Writing II			2
	PPRT-230 Newspaper Production I		3	
	PPRT-330 Newspaper Production II			3
	SPSP-211/271 College Physics I	4		
	SPSP-213/273 College Physics III		4	
	SPSP-212/272 College Physics II OR			4
	GSSE-000 Principles of Economics (301 or 302)	4	4	4
	"Physical Education Electives	**0**	**0**	**0**
3	PPRT-232 Ink & Substrates	3		
	PPRT-322 Circulation & Mailroom	3		
	Professional Elective	3		
	GLLC-502 Group Leadership	4		
	PPRM-420 Electronic Communications/Pr & Pub		4	
	PPRT-306 Tone Reproduction & Halftone Analysis		3	
	Professional Elective		6	
	PPRT-406 Color Separation Systems			3
	PPRM-511 Labor Relations			4
	PPRT-310 Newspaper Presses			3
	Professional Elective			3
	"Liberal Arts Electives	4	4	4
4	PPRM-515 Legal Problems in Pr. & Pub	4		
	Professional Elective	**6**		
	PPRM-520 Systems Planning		4	
	Professional Elective			4
	PPRM-514 Newspaper Management			4
	Professional Elective			**6**
	'Liberal Arts	4	4	4
	"Liberal Arts Senior Seminar	2		

•See page 118 for Liberal Arts requirements.
‡See page 176 for policy on Physical Education.
•"SPMS student must tie Junior status or above to enroll In these courses. See your advisor for scheduling of courses.
tRequlred only for those students lacking Trigonometry.

Program of study

The School of Printing Management and Sciences offers a four-year course of study leading to a bachelor of science degree in newspaper production management. The newspaper industry is large: 383,000 people in 8,200 establishments producing more than 1,700 dailies and 7,400 weeklies. *The U.S. Industrial Outlook* says of the newspaper industry, "The continuing development and the implementation of new technologies, successful research efforts and educational programs will support a growth rate ranging between seven and eight percent per year to the 1990s."

The program stresses management, engineering, sciences, computer printing technology, along with liberal studies.

Math/science sequences
Each student must take 13 or 14 credits of college mathematics as required by the School of Printing Management and Sciences. Nine or 10 of these mathematics credits are earned in the freshman year, and placement will be determined through testing and a review of the student's academic background. Preparatory math courses will be available if need for them exists.

The second-year science sequence must be Chemical Foundations I, II, III (SCHG-281, 282, 283) and the accompanying lab (SCHG-285, 286, 287). However, with departmental approval students can substitute certain other college chemistry sequences. The third-year recommended science sequence—to be chosen after consulting with the coordinator of the program—is a series of computer courses.

Liberal arts electives
In general, the program requires that the student take 14 courses from this area, which includes subjects such as economics, psychology, logic, ethics, language communications, literature, and fine arts appreciation.

Professional electives
These are usually selected from the electives listed below, but may also include any other School of Printing Management and Sciences course. Students elect courses to suit their individual interests and objectives and to meet the credit requirements of the newspaper program. Selection is subject to prerequisite requirements and availability of courses.

Recommended professional electives:
PPRM-516 Marketing in the Graphic Arts
PPRT-506 Electronic Imaging and Color Control
PPRM-540 Electronic Communications in Printing and Publishing III
PPRM-702 Computers in Management

Printing and Applied Computer Science

Frank Cost, Coordinator

In recent years computers have become widely used in most areas of the graphic arts industry. From typesetting to management information and from inking systems to automated bindery operations, computers ih the graphic arts have created a need for personnel with an in-depth knowledge of both printing and computer science. Recognizing this need, the School of Printing Management and Sciences, in cooperation with the School of Computer Science, established the printing and applied computer science program for students who want to combine both fields.

Career opportunities
Graduates with a BS degree in printing and applied computer science have many career opportunities open to them. These include data processing supervisor; computer system analyst; customer training, marketing support, and sales for computer-based printing equipment manufacturers; and custom software design and development. These positions can lead to management responsibilities as production manager, director of computer technology, and operations manager—all stepping stones to top management opportunities.

Requirements for admission
Requirements for admission are given in the general information section of this bulletin. In addition, it is highly desirable that the applicant have a great interest in printing and computers, which can be shown by success in working on a school newspaper or yearbook, by working summers in a printing plant, or by general interest in graphic communications as well as in computers and their applications. High school graduation and course work in elementary algebra, plane geometry, intermediate algebra, trigonometry, physics, and/or chemistry is required. Preference is given to those who have had additional work in physics, calculus, and computer usage.

Program of study
The School of Printing Management and Sciences offers a four-year course leading to a bachelor of science degree in printing and applied computer science.

Approximately 20 percent of the course work is in computer science, 30 percent in printing technology and management, 25 percent in math/science, and 25 percent in liberal arts.

A survey of employers in the graphic arts industry indicates the strong need for trained printing/computer specialists. As more and more graphic firms adopt computer technology, the need will grow for personnel who can develop and utilize equipment, interpret the graphic arts industry to the computer industry, apply computers to printing processes, manage computer systems, and work with vendors.

The cooperative plan of study is required in the School of Printing Management and Sciences for students choosing this program. Graduates of two-year colleges are encouraged to transfer into the four-year program. Transfer students find that many of their two-year college credits are applicable toward the four-year degree. The first-year curriculum of this program and that of the printing systems and engineering' program are practically the same. Therefore, a student may transfer between the programs at that time with no loss of credit.

Professional electives
Students may elect professional courses in printing or computer science and technology to complete their elective course requirement.

Liberal arts electives
In general, the program requires that the student take at least one course each quarter from this area, which includes such subjects as economics, psychology, logic, ethics, language, communications, literature, and fine arts appreciation.

Yr.	PRINTING AND APPLIED COMPUTER SCIENCE	Qtr. Credit Hours*		
		FALL	WTR.	SPG.
	A program combining course work in computer science and printing that provides favorable transfer arrangements from math/science-based programs.			
	PPRT-230 Printing Process Concepts	4		
	PPRT-250 Concepts of Design, Typo		4	
	PPRT-270 Prepress Imaging Concepts			4
	ICSS-241 Programming I	4		
	ICSS-242 Programming II		4	
1	ICSS-305 Assembly Language			4
	SMAM-251 Calculus I	4-		
	SMAM-252 Calculus II		.4	
	SMAM-253 Calculus III			4
	tLiberal Arts (English Composition)	4		
	^Liberal Arts (Core)		4	4
	"PPRM-203 Printing/Computer Seminar	1		
	Physical Education Electives	0	0	0
	PPRM-240 Printing Financial Control	4		
	PPRM-260 Printing Management Planning		4	
	PPRM-280 Printing Management Leadership			4
	ICSS-243 Programming III	4		
	ICSS-325 Data Organization Management		4	
	SMAM-305 Calculus IV	4		
2	SMAM-265 Discrete Math		4	
	SMAM-351 Probability & Stats			4
	liberal Arts (Core)	4		4
	SPSP-311 Physics		4	
	SPSP-312 Physics			4
	PPRM-262 Technical Writing I	2		
	PPRM-263 Technical Writing II >		2	
	^Physical Education Electives	0	0	0
	ICSS-420 Data Communications		4	
	ICSS-315 Digital Computer Organization			4
	SMAM-352 Probability & Stats		4	
3	PPRT-232 Ink & Substrates		3	
	tLiberal Arts (Core)		4	4
	tLiberal Arts (Concentration)			4
	ICSS-521 Microprocessors			4
	tLiberal Arts (Concentration)		4	4
	^Liberal Arts (Elective)			4
	PPRT-234 Print Finishing & Distribution		3	
4	PPRM-420 Electronic Communications			4
	PPRT-500 Quality Control in Graphic Arts		3	
	ICSS-565 Computer Systems Selection		4	
	ICSS-570 Intro Computer Graphics			4
	PPRM-406 Printing Production Management . . ,		3	
	tLiberal Arts (Elective)	4	4	
	PPRT-321 Web Offset	3		
5	tLiberal Arts (Senior Seminar)	2		
	Professional Electives	8	10	

'Total quarter credit hours 196.

"Printing/Computer Seminar— 1 quarter credit

This seminar is an introduction to the subject of computer applications in the graphic arts. The seminar will be taught by the Coordinator of the Printing and Applied Computer Science program, and will serve to introduce new students to the facilities available to them in both the School of Printing Management and Sciences and in the School of Computer Science and Technology, including use of the VAX/VMS system and various microcomputer facilities on campus. The seminar will also serve as a forum for discussion of various industrial and business trends relevant to this unique interdisciplinary field of study.

'Seepage 118 for Liberal Arts requirements.

‡See page 176 for policy on Physical Education.

NOTE: Students are eligible to begin co-op upon completion of their sophomore year. Co-ops usually run for two quarters. Students beginning co-op in the Summer Quarter will usually return to school in the Winter Quarter of their third calendar year at RIT.

College of Liberal Arts

Liberal Education in the Humanities and Social Sciences

Dr. William Daniels, Dean

The College of Liberal Arts provides students with a program of liberal education which develops their potential as intellectually aware and responsible human beings. It is the foundation for the student's entire educational experience. This program of liberal education is distinguishable from the student's professional education in that its purpose is not to nurture specifically professional knowledge or skills, but rather each student's capabilities as a thinking, creating, and responsible person.

The program of the College of Liberal Arts, in which all RIT students participate, aims to accomplish the following goals:

—To develop the student's ability to think rationally, to read critically, to speak and write cogently and clearly;
—To develop the student's ability to analyze issues, to question assumptions, to investigate problems, and to seek solutions;
—To develop the student's understanding of aesthetic values and their relevance to life;
—To expand the student's intellectual horizons by acquaintance with the western heritage;
—To develop the student's awareness of how the past invariably affects the present and the future;
—lb promote the student's under standing of our society and how it interrelates with and is indebted to other cultures, thereby liberating the student from a narrow provincialism;
—To acquaint the student with knowledge of the basic principles and dynamics of individual and group behavior in the many areas of human interaction;
—To develop the student's understanding of the nature of ethical values;
—To develop the student's awareness of the social, ecological, and ethical consequences of technology, and to foster a sense of responsibility to self and society;
—To develop the student's ability to bring together varied insights and methods of analysis for the purpose of better understanding complex human and social problems.

These goals are fostered throughout a student's education at RIT by the Liberal Arts curriculum, which offers each student the opportunity to acquire these abilities and understandings through courses in the humanities and social sciences. In addition to regular courses a student may engage in independent studies. These are planned by both student and instructor and provide an opportunity for the student to develop initiative and imagination in a flexible program of study.

Included in the college are under graduate degree programs in criminal justice, social work, economics, and professional and technical communication which are described later in this bulletin. The close involvement of these programs with the humanities and social sciences instruction in liberal arts is an example of what the college is endeavoring to do throughout the cur riculum, that is, to demonstrate the interrelation of all fields of learning.

The college also offers the master of science degree in school psychology.

Faculty

The faculty of the College of Liberal Arts is selected from candidates with advanced study in the social sciences and humanities. These men and women are dedicated teachers, who have chosen as their professional goals the provision of rich and meaningful learning experiences for students and continuing growth in their scholarly fields.

The Liberal Arts Curriculum

The curriculum of study in the humanities and social sciences which all RIT students pursue in the College of Liberal Arts may be understood by examining the following chart. Students in the various RIT associate and baccalaureate degree programs complete this entire Liberal Arts curriculum, or a ' modification of it, as applicable to their particular cjegree programs. Faculty academic advisors in the College of Liberal Arts and in other colleges of the Institute assist students in interpreting the Liberal Arts curriculum as it applies to their particular degree program.

The curriculum consists of fourteen courses (54 quarter credits) arranged in five groups:

1. English Composition;
2. The core curriculum of six foundation courses in the humanities and social sciences (200-300 course numbers);
3. A disciplinary or iriterdisciplinary concentration of three advanced courses (400 course numbers);
4. Three advanced electives (400 and 500 course numbers);
5. The Liberal Arts Senior Seminar and Project.

Visually, the curriculum may be represented as follows:

In addition to English Composition, the specific **Core Courses** are:

Literature: required

Fine Arts: required
- Fine Arts: Visual Arts
- Fine Arts: Musical Arts
- Fine Arts: Film Arts

History: one required
- History: Modern American
- History: Modern European

Philosophy; or **Science, Technology and Values:** one required
- Philosophy: Ethics
- Philosophy: Critical Thinking
- Philosophy: Selected Issues
- Science, Technology, and Values

t

Social Sciences: two required
Introduction to Economics
American Politics, or
Ideology and the Political Process
Introduction to Psychology
Foundations of Sociology, or
Cultural Anthropology

Concentration
A concentration is a group of closely related advanced courses from which a student will choose three. The student's liberal education is enhanced by such a concentration in the following ways:

1. Students achieve greater depth in learning because they have, where necessary, taken the prerequisites for these courses and because they benefit from the accumulated depth of the three-course concentration itself.
2. They achieve a kind of "minor" in an area of liberal education.
3. They are able to see cohesion among at least three of their advanced courses.
4. They are able to build on and link new learning to their core courses.
5. They can develop more judgment and understanding in an area of the RIT or college goals.

A concentration is pursued in the third, fourth or fifth year of the baccalaureate programs and can take either of the following forms:

1. Disciplinary Concentration: three related courses in a single discipline leading to an in-depth knowledge of the methods, problems and achievements of that mode of inquiry.
2. Interdisciplinary Concentration: three related courses from different disciplines each one of which speaks to some aspect of a common area, subject, or topic.

A concentration is composed of three courses chosen from the four to eight courses that make up the concentration. The limited number of courses qualifying for the concentration increases the frequency with which they will be offered and the flexibility students will have in scheduling and registration.

The Liberal Arts concentrations available to RIT baccalaureate students will be the following.

Disciplinary concentrations
Prerequisites and the specific courses qualifying for each of the following disciplinary concentrations will be determined by the Liberal Arts academic committees responsible for these areas of study. In each case, the student will choose three of the four to eight courses that qualify for the concentration.

The Disciplinary Concentrations available to students are the following:
Language Communications
Economics
American Artistic Experience
History
The Social Impacts of Science and Technology
International Relations
Literature
Philosophy
American Politics
Psychology
Social Change in a Technological Society

Interdisciplinary concentrations
A number of interdisciplinary concentrations are clustered around the goals of the Institute and the college. These concentrations involve in-depth study of a topic or an area believed to represent an important realm of interdisciplinary learning for educated persons. Each of these interdisciplinary concentrations will consist of four to eight courses from which a student will choose three. The specific courses composing each concentration will be formulated by faculty working in close collaboration with one another so that the courses of the concentration are closely related.

The interdisciplinary concentrations now available to students are the following:
Environmental Studies
Perspectives on Religion
Women's Studies
Global Studies
Foreign Language/Culture: Chinese, German, Japanese, Spanish
Peace Studies
Minority Relations in the United States

Electives
The opportunity to choose three elective courses provides students with an element of choice in planning their liberal arts program.

Senior seminar and project
The purposes of the Senior Seminar and Project are the following:

- to give senior students the opportunity to prepare theses or projects that call for analysis and synthesis and for the application of their Liberal Arts experience to major issues that may affect their professional careers;
- to provide seminars for all senior students on a general theme related to their required thesis or project:
- to provide an advanced experience of problem-solving and value-clarification.

The Senior Seminar will be designed and implemented on an annual basis by a Seminar Committee of faculty selected a year in advance.

Music at RIT
The College of Liberal Arts sponsors many musical events on the RIT campus, as well as supporting several musical groups. For more information about the many musical groups and activities open to students, please contact the . music faculty of the college.

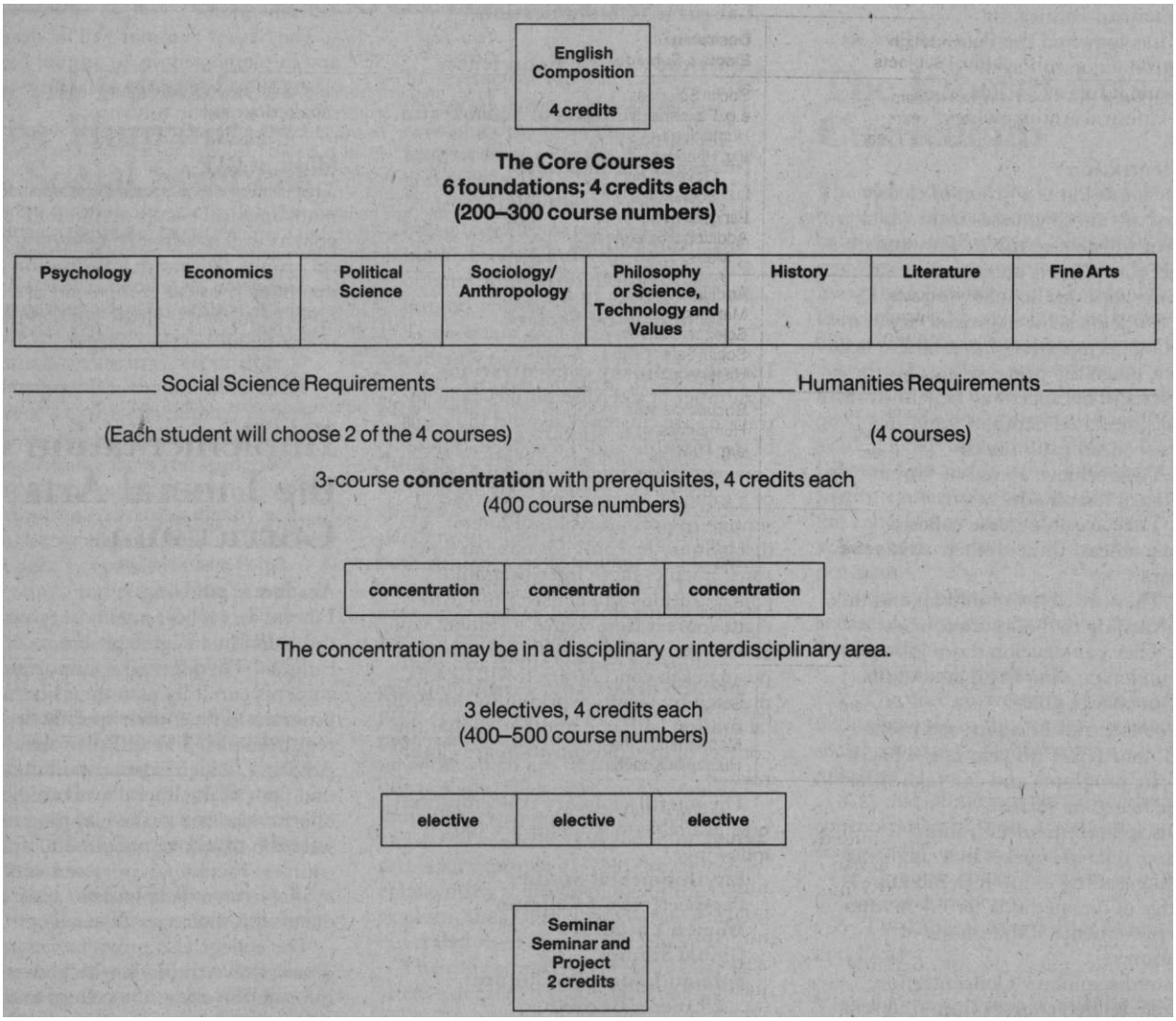
Implementation of the Liberal Arts Curriculum

Academic 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. The Office of Academic Advising, which is located on the second floor of the liberal arts building, offers assistance in the planning and selection of appropriate liberal arts courses. Faculty advisors and staff are available on a daily basis to assist students with their specific needs.

The college also provides a course description handbook with general information about the college and specific information regarding all liberal arts courses. Academic worksheets developed for each specific degree program also are available to help in maintaining records. The handbook and worksheets are available in the Office of Academic Advising.

Additionally, those students who are enrolled in liberal arts degree programs are assigned faculty advisors through their specific departments. These advisors counsel students in their degree requirements, answer specific questions regarding field placement, and provide career counseling. Students enrolled in the College of Liberal Arts degree programs are *required* to seek faculty advisement on a quarterly basis. Students arrange appointments with their faculty advisors during regularly scheduled office hours.

The Liberal Arts Curriculum



Part-time students and evening programs and courses

The College of Liberal Arts offers evenings and Saturdays a full range of upper-division humanities and social science courses required in baccalaureate programs pursued in all colleges of RIT by part-time evening students. These courses are part of the liberal arts curriculum expected of all Institute students pursuing a bachelor's degree and are equivalent to courses required for students completing degrees under the aiispices of the College of Continuing Education.

Courses are scheduled one or two nights a week, Monday through Thursday, or on Saturday mornings. Each course is 4 academic quarter credits, except the Senior Seminar, which is 2 credits.

Part-time students also are welcome to register for liberal arts courses offered during day-time hours if their schedules permit.

To register for liberal arts courses on a part-time basis it is not necessary to be enrolled in an RIT degree program. Part-time and evening students are strongly encouraged to contact the Liberal Arts Office of Academic Advising (475-6987) or the college scheduling officer (475-2448) for assistance in selecting and registering for courses. Both offices are located on the second floor of the College of Liberal Arts and are open 9 a.m. to 7:30 p.m., Monday through Thursday, and 9 a.m. to 3:30 p.m. on Friday.

Registration

The courses of the College of Liberal Arts are available to students registered in one of the colleges of the Institute as well as to part-time non-matriculated students. Undergraduate degree programs in social work, criminal justice, economics and professional and technical communication are available to students through the College of Liberal Arts as is the technical and liberal studies option, an academic program for students who are in the process of choosing a major.

It should be noted that all courses except the Senior Seminar carry *four quarter hours of credit.* Further, all courses meet at least three scheduled class hours each week. The difference between credit hours and class hours is designed to provide for carefully planned and extensive out-of-class assignments and projects. The purpose of this plan is to provide the student

Freshman Admission Requirements

Transfer Admission with junior standing

Program	Required High School Subjects	Desirable Elective Subjects	Two-Year College Programs
Social Work	English 4 years Algebra 2 years Any Science 1 year	Social Sciences e.g. Psychology Humanities e.g. History Government Economics Languages Additional Science and Math	Junior standing is offered for an associate degree in human services or in another appropriate major. Students may be admitted without the complete high school algebra requirement fulfilled, but will be expected to finish this requirement prior to enrolling in College Algebra, SMAM-204. Holders of liberal arts or other two-year degrees also are admitted to the programs, and transfer credit is given to the fullest extent possible. Transfer students can be given credit for professional courses required in the first two years if they have had comparable course work elsewhere.
Economics	English 4 years Elem. Algebra Plane Geometry Inter. Algebra	Additional Mathematics Science courses Social Science and History courses	Students with associate degrees in business administration or a related area enter as juniors. Maximum allowable transfer credit is given to those who have taken liberal arts or other professional courses elsewhere.
Criminal Justice	English 4 years Mathematics 1 year Any Science 1 year	Social Sciences Humanities e.g. History Government Economics	Students with associate degrees in criminal justice or a related area enter as juniors. Maximum allowable transfer credit is given those who have taken liberal arts or other professional courses elsewhere.
Professional and Technical Communication	English 4 years Mathematics 2 years Science 1 year	Additional Mathematics, Science, History, Social Science, and Communication courses	Holders of liberal arts degrees with appropriate work in English and communication or a student in a technical or scientific field with a demonstrated aptitude for communication.
Technical & Liberal Studies	English 4 years Mathematics 2 years Science 2 years	Additional Social Science, Science Mathematics and Humanities courses	Although occasional transfers are accepted, the focus of Technical & Liberal Studies is on bringing the "undecided students to a degree program choice well before the junior year; junior status can rarely be given to two-year transfers who enter Technical & Liberal Studies.

with opportunities for instructor-guided extended responsibilities beyond those normally found in a regular classroom situation.

The College of Liberal Arts will enroll students who are not currently degree candidates. Individual programs will be developed for each student.

Diploma courses will not normally be used toward the completion of Liberal Arts requirements.

Summer

The College of Liberal Arts offers a number of courses each summer in language and literature, science and humanities, and social science, as well as degree program courses in criminal justice, social work, economics, and communication.

Information concerning summer courses to be offered can be obtained by contacting the college scheduling officer; by requesting the Summer Bulletin from the College of Continuing Education or the Office of Admissions, One Lomb Memorial Drive, P.O. Box 9887, Rochester, New York 14623.

College of Liberal Arts: Degree Programs

General information on RIT's admission requirements, procedures and services is included in detail on pages 153-154 of this bulletin.

The College of Liberal Arts offers bachelor of science degree programs in the following areas: social work, criminal justice, economics, and professional and technic mmunication, as well as the technical ,;nd liberal studies option, art academic and advising program for students who are undecided about which RIT degree program to pursue. The admission requirements for these programs are given below, and each program is described in detail on the pages that follow.

The Criminal Justice Program

Richard Lewis, Program Chairperson

The bachelor of science degree program in criminal justice offers students a broad, well-rounded education with a curriculum designed to prepare them for a wide range of careers in criminal justice, to provide continuing education for those professionals already employed in criminal justice and to offer a strong academic foundation for graduate school.

RIT's approach to the study of criminal justice combines theoretical perspectives with practical experience. As students study in the areas of crime, criminal behavior and social control mechanisms, the emphasis is on problem-solving techniques based on the rapidly 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 required and elective courses with a career-oriented internship.

Career planning

Upon acceptance into the Criminal Justice Program, each student is assigned a faculty advisor 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 services, thus broadening their career options.

During the junior and senior year, with faculty guidance, students select professional electives in a specific area of interest from those offered within the program, within the college, or in any of eight other colleges in the Institute. Criminal justice faculty offer 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, liberal studies and social work. The variety of opportunities available in the expanding field of criminal justice is reflected in the broad selection of professional electives allowed by the program.

Career opportunities

The majority of criminal justice students seek employment after completion of the BS degree and are pursuing careers throughout the country in criminal justice and related fields that include the following: law enforcement (U.S. deputy marshal, U.S. secret service, and police officers and administrators on the state, county and local levels); corrections (probation and parole officers, institutional correctional officers, counselors and administrators—adult and juvenile); industrial and retail security; court administration; counselors and administrators in youth and adult service agencies; academy training officers; crime control planning; program evaluation, and research.

Some students go directly to graduate schools after graduation; others take graduate courses while employed and/ or seek advanced degrees to increase their opportunities within their chosen criminal justice area or to facilitate career change. Most often, criminal justice graduates further their education in the areas of law, administration, social work or business.

Pre-law study

The criminal justice curriculum prepares students for law school by combining a broad liberal arts background with intensive study in criminal justice practice and theory. Students work closely with a faculty advisor in selecting appropriate professional and liberal arts electives. During their senior year, pre-law students spend 10 weeks, 30 hours per week as interns working with established attorneys in the office of the district attorney, public defender, or state attorney general, a private law firm, or in any number of public or privately funded organizations dealing with litigation. Annually, the Pre-Law Association, comprised of interested students from throughout the Institute, publishes student research papers in Legal Research at RIT.

Field experience

During the senior year, students have the opportunity to choose an internship from a number of agencies and organizations in the areas of law, law enforcement, institutional and non-institutional corrections, courts, juvenile advocacy and counseling programs and security. For one quarter (10 weeks), 30 hours per week, students work tinder an agency field supervisor and, at the same time, attend a Field Seminar and a class in Field Research with peers who are doing field placements in other agencies. Placements are individualized in accord with a student's career objectives.

The faculty

All members of the faculty in the Criminal Justice Program hold advanced degrees, have had professional experience in criminal justice, have evidenced teaching ability and are committed to continuing professional growth in their areas of expertise. Faculty offices are conveniently located, and the faculty spend many non-teaching hours in their offices with an open door policy in order to assist students with personal problems as well as academic advising.

Faculty members regularly supervise individual students who are doing well in their course work and have an interest in independent study projects. Projects may vary from one quarter credit hour to eight quarter credit hours.

The student body

Criminal justice students are admitted as freshmen or as transfer students. Many who enter as juniors hold two-year degrees in criminal justice, but others make this career decision after one or two years in a liberal arts or other program. The criminal justice curriculum is flexible enough to accommodate transfer students from a wide variety of academic and technical programs. Maximum credit is offered for courses where the grade is "C" or higher.

Principal field of study

For students matriculated in the Criminal Justice Program, the principal field of study includes all courses offered in the Criminal Justice Program (designated as GCJC). Students not maintaining a 2.0 cumulative grade point average in the principal field of study are subject to academic probation or suspension according to Institute policy. Students must have a 2.0 cumulative average to be eligible for field experience.

Professional elective options

The following list of professional electives is illustrative of those offered periodically within the Criminal Justice Program. A student selects professional elective courses with the advice of his/ her faculty advisor.

One of the strengths of the program is that students may elect to take professional electives from other designated colleges in the Institute and are thus able to develop a concentration in a related professional area applicable to their career goal.

Professional elective options:
Criminal Justice
Corrections
- Constitutional Law
- Legal Rights of Convicted Offenders
- Correctional Administration
- Social Control of Deviant Behavior
- Counseling in the Criminal Justice System
- Alternatives to Incarceration
- Sentencing Process

Criminology
- Organized Crime
- Social Control of Deviant Behavior
- White Collar Crime
- Victimless Crime
- Computer Crime
- Women and Crime

Law
- Introduction to Para-Legal
- Constitutional Law
- Legal Rights of Convicted Offenders
- Social Control of Deviant Behavior
- Evidence
- Court Administration
- Comparative Criminal Law
- Sentencing Process
- Victimless Crime
- Seminar in Law

Law Enforcement
- Administrative Concepts of Law Enforcement
- Organized Crime
- Investigative Techniques
- Constitutional Law
- Civil Disobedience and Criminal Justice
- White Collar Crime
- Evidence
- Police Community Relations
- Victimless Crime

Security
- Organized Crime
- Investigative Techniques
- White Collar Crime
- Physical Security and Safety
- Retail Security
- Computer Crime
- Security Management
- Seminar in Security

Professional elective options:
Related professional areas
With the approval of the faculty advisor, a student may select an additional professional elective concentration from courses offered within the College of Liberal Arts or in any of the other colleges of the Institute. Many students develop special concentrations in accounting, computer science, management, or social work.

BS DEGREE IN CRIMINAL JUSTICE

Required first and second year courses
- GCJC-201 The Criminal Justice System
- GCJC-203 Criminology
- GCJC-207 Corrections
- GCJC-303 Law Enforcement in Society
- GCJC-204 Public Administration
- GCJC-301 Concepts of Criminal Law
- GCJC-304 Judicial Process
- GCJC-309 Juvenile Justice
- English Composition
- Literature
- Fine Arts
- History
- 1 of the following Science & Humanities:
  - Science, Technology and Values
  - Philosophy
- 2 of the following Social Sciences:
  - Economics - Psychology
  - Sociology/Anthropology
  - Political Science
- 2 Science
- 2 Mathematics
- 1 Computer Science
- 6 Physical Education Courses

Required third and fourth year courses
- GCJC-401 Scientific Methodology
- GCJC-411 Seminar in Corrections
- GCJC-526 Seminar in Law Enforcement
- GCJC-528 Etiology of Crime
- GCJC-403 Field Experience
- GCJC-404 Field Experience Seminar
- GCJC-541 Field Research
- GCJC-514 Planning & Change
- 3 Liberal Arts Electives
- 3 Liberal Arts Concentration Courses
- 1 Liberal Arts Senior Seminar

Required Electives taken throughout 4 years

B Professional Electives
2 Non-designated Electives
2 Open Electives

• With the exception of the Liberal Arts Senior Seminar, which receives 2 quarter credit hours, and Physical Education, for which no credit is given, courses carry 4 quarter credit hours.

The BS Degree Program in Social Work

Helen Wadsworth, Program Chairperson

RIT's social work program, established in 1971, provides an innovative humanistic program and a strong, socially conscious faculty set against the background of one of the most technologically current educational institutions in the country, with a state-of-the-art computer network available to all students.

Accredited by the Council on Social Work Education, the baccalaureate social work program provides students with the knowledge, skills and experience that enable them to obtain positions and pursue careers in public and private settings offering assistance to individuals, families, groups, and the community.

The education of the social worker addresses the needs of the urban and rural population; the young and the elderly; majority and minority groups; the poor; the infirm; the handicapped; the family or individual in crises; and persons with special problems such as learning disabilities, alcoholism and mental health problems. The profession is committed to change for the better and the improvement of human experience.

Course work is organized around five areas: knowledge of social programs, policy processes and the professions; professional practice methodology and skills; professionally supervised field instruction in a social agency; a wide-ranging liberal arts education in the humanities and social sciences, particularly in the areas of human behavior and the social environment; and research and evaluation of practice.

RIT's program in social work is known for an unusually wide selection of professional courses, the opportunity to elect specific practice areas, and a full-time intensive field instruction internship. Each social work student is assigned a faculty advisor to assist with academic planning and career guidance throughout the course of study.

We believe that social workers have a dual role in the process of social change; they directly serve the needs of individuals, families, groups and communities and they work on behalf of clients to effect change in policies, legislation and broad social issues.

Personal growth

The social work curriculum encourages personal growth as an essential aspect of professional growth. In various courses students learn to increase their own self-awareness, to define their values, to understand and respect the values of others, and to develop the per sonal and professional strengths necessary to successful practice.

Curriculum

RIT's social work program is one of the strongest in the country and is distinctive in many ways. We offer students a curriculum that emphasizes the application of course content to the primary minority subcultures confronted by social workers: Blacks, Hispanics and disabled people. Similarly, the curriculum deals with discrimination against people based on race, color, gender, age, creed, ethnic or national origin, disability, political or sexual orientation.

' The social work curriculum aims to develop an understanding of society and of social needs, especially of people who are poor. Students learn how the institutions of society contribute toward resolving problems and may, sometimes, aggravate them.

Social work students take a sequence of courses that introduces them to the concepts of social work practice and teaches fundamental skills needed to work successfully with individuals, families, groups, and the community to solve problems and resolve conflict. Opportunities for "hands-on" practice are available throughout the four-year curriculum. RIT's program has a strong focus on research skills, the appropriate use of computers in analyzing data from social work practice, and exploration of the effects of information technology on social problems.

In addition, students become well-grounded in human behavior and the social environment from psychological, sociological and biological perspectives, the humanities, and social sciences to broaden their educational preparation.

Social work program and deafness: a unique opportunity

The location of the National Technical Institute for the Deaf (NTID) at RIT provides a special opportunity for students and faculty in the social work program. Because of the close relationship with NTID, RIT's social work program offers an unsurpassed education in dealing with deafness, in preparing deaf students for social work careers, and in increasing sensitization and responsiveness of future professionals, hearing and deaf, to the needs of disabled persons.

Ours is the only permanently integrated social work education program in the world for both hearing and deaf students. We offer both deaf and hearing students the opportunity tp study the applications of social work practice to the needs of deaf persons.

Elective courses available to social work students are excellent preparation for work with deafness and other disabilities. NTID also offers an associate degree in interpreting for the deaf.

Other elective courses deal with services to families and children, family violence, alcoholism and substance abuse, employee assistance programs, gerontology (aging and problems of the elderly), legal social work (including a pre-law focus), the emerging field of computer applications to social work practice, and management and supervision.

Career and placement focus

Like all programs at RIT, our focus is on careers. We prepare students to enter directly into meaningful and rewarding positions in governmental and voluntary social agencies. RIT's achievement in job placement and in preparing students for graduate education is outstanding.

Graduates of the social work program receive advanced standing at over half the graduate schools of social work in the country. This means they can complete a two-year MSW program in only one year of study.

Most graduates have found their RIT field placement experiences to be extremely helpful in making career decisions and in obtaining jobs. In addition, the resources of RIT's Center for Cooperative Education and Placement are available to all of our students. These services include career counseling, assisting with resumes, compiling job listings, arranging on-campus interviews, mailing letters of reference, and keeping a job resource library.

The older student

Older students and those returning to study after being away from the classroom for awhile find our program especially accommodating, challenging and rewarding. Faculty advisors, many of whom have returned to school in the middle of their careers, are sensitive to the special pressures on returning students and the opportunities open to them. For example, in field placements they make every effort to match the degree of challenge with the skills of each particular student.

Transfer students

Transfer students are evaluated and given credit for previous education wherever it is most appropriate. Articulation agreements exist with several colleges.

Transfer students with two-year degrees in human services or related programs, qrc given credit for their studies, and can expect to complete the social work program in two years. See the curriculum chart for details.

Field instruction

Field instruction is an important part of the program. During the senior year, students complete an internship in a social agency. Supervised by a professional social worker and supported with integrated academic courses, they learn to apply the knowledge and skills acquired in the classroom.

During two academic quarters, students spend 30 hours per week in a social agency or program. They may opt for field placements of four quarters that carry full-tuition stipends.

RIT social work students have an opportunity to provide direct services to clients during their field placements. Some have become involved in family support counseling, advising pregnant adolescents, helping children with emotional problems, intervening on behalf of clients in Family Court and in the attorney general's office, and working with alcohol and substance abusing people.

As an alternative some students have preferred to work in the planning and funding of social programs, evaluating program effectiveness and measuring the quality of services, organizing communities to bring about change in local problems, educating the public on a broad social issue, or researching a carefully coordinated social work effort.

In field placement each student is taught by a social worker in the agency and is supervised by a faculty member. Each week, students in field placement meet on campus to evaluate experiences and to assess development of professional skills.

"We feel that a closely supervised educational experience in the field is critically important to the development of professional social workers," says Michael Stone, coordinator of Field Placement for the social work program. "Much care and attention is given each student in choosing an appropriate agency, one that will provide a challenge and will result in professional growth."

The program works with more than 100 agencies to ensure that students' internships will relate to their career goals. In recent years, students have been placed in these agencies:

Alternatives for Battered Women
Board of Cooperative Educational Services
Center for Youth Services
DePaul Mental Health Services
Fairport Central Schools
Family Services of Rochester
Genesee Hospital
Hillside Children's Center
Monroe County Association for the Hearing Impaired
Monroe County Department of Social Services
Family Team
Child Protective Team
Project Intervention
Rochester Center for Independent Living
Rochester School for the Deaf
Saint Joseph's Villa
Substance Abuse Intervention Services for the Deaf

Yr.	BS DEGREE IN SOCIAL WORK: FOUR-YEAR CURRICULUM	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	0516-099 Social Work Program Seminar	0	0	0
	0516-210 The Professional Social Work Role	4		
	0516-212 Self-Awareness in the Helping Role		4	
	0516-216 Community Services I		4	
	0516-217 Community Services II			4
	0514-440 Childhood and Adolescence		4	
	0515-210 Foundations of Sociology			4
	0507-493 History of Social Discrimination			4
	0514-210 Introduction to Psychology	4		
	0507-30 Liberal Arts Core: History	4		
	0505-21 Liberal Arts Core: Fine Arts	4		
	0502-220 Liberal Arts Core: English Composition		4	
	0504-332 Liberal Arts Core: Literature			4
	"Physical Education	0		
2	0516-099 Social Work Program Seminar	0	0	0
	0516-302 History of Social Wefare	4		
	0516-305 Structure & Function of Social Wefare		4	
	• Two Professional Electives			8
	0515-483 Hispanic American Culture	4		
	0515-482 Black Culture		4	
	1004-211 Human Biology I		4	
	1004-212 Human Biology II			4
	1016-204 College Algebra		4	
	05 -21 Liberal Arts Core: Econ., Pol. Sci., or Anthro	4		
	05 -21 Liberal Arts Core: Phil., or Sci. Tech. Society	4		
	One Liberal Arts Elective			4
	"Physical Education	0	0	0
3	0516-099 Social Work Program Seminar	0	0	0
	0516-405 The Family from a Social Work Perspective	4		
	0516-435 Computer Applications to SW Research		4	
	0516-456 Group Theory in Social Work		4	
	0516-465 Assessing Community Needs			4
	0516-475 Interviewing and the Helping Relationship			4
	Two Professional Electives	4	4	
	1016-319 Data Analysis			4
	Two Liberal Arts Electives	4		4
	Two Liberal Arts Concentration Courses	4	4	
	"Physical Education	0	0	
4	0516-099 Social Work Program Seminar	0	0	0
	0516-505 Assessment and Problem-Solving	4		
	#0516-506 Field Instruction I	5		
	0516-527 The Supervisory Process	4		
	0516-535 Advanced Social Work Research	4		
	0516-550 Social Intervention		4	
	#0516-551 Field Instruction II		5	
	0516-560 Managing Community Services		4	
	0516-595 Policy and Planning Processes			4
	0516-598 Professional Seminar			4
	One Liberal Arts Concentration Course			4
	0520-501 Liberal Arts Senior Seminar			2

 # Full-time placement in a social work agency
' Seepage 176 for policy on Physical Education.

Senior field placement stipends
Beginning in the fall of 1987, social work students entering their senior field instruction have the option of completing the required 20-week placement in an agency, or of accepting a 12-month placement which carries with it a minimum of a $6,500 agency stipend, or a full-tuition stipend of $10,000, or a full-expense stipend of $18,000 for financially eligible students. The RIT Financial Aid Form must be filed prior to April 15. This program is especially attractive for minority students and all students with severely limited financial resources. Students must spend at least their junior year in the RIT social work program to qualify for this stipend, and since placements are on a competitive basis, preference is given to students who enroll early. Social work at RIT is affordable!

New social work learning laboratory
Established in the fall of 1987, the Social Work Learning Laboratory provides RIT students with unique opportunities to learn intervention skills by direct observation of colleagues through two-way viewing facilities and by videotaped feedback of their own practice. The laboratory also houses IBM, Macintosh, and VT220 computers for student use. They function both as microcomputers for specialized social work software and as terminals connected to the RIT VAX/VMS network for accessing word processing, conferencing, statistical analysis, electronic mail, intracampus visual phone, and interuniversity communication programs. Students routinely submit assignments to social work courses via computer mail; consult each other about group projects; schedule appointments with faculty; type, edit and finely polish term papers; and assist social agencies to analyze data on their services to clients. The laboratory also contains up-to-date information on all social work programs in the country at the undergraduate and graduate levels and on social work career opportunities around the country.

Yr.	BS IN SOCIAL WORK: TRANSFER CURRICULUM	Qtr. Credit Hours			
		SMR.	FALL	WTR.	SPO.
3	0516-099 Social Work Program Seminar		0	0	0
	0516-210 The Professional Social Work Role		4		
	0516-302 History of Social Welfare		4		
	0516-405 The Family from a Social Work Perspective . . .		4		
	0516-435 Computer Applications to SW Research			4	
	0516-456 Group Theory in Social Work			4	
	0516-465 Assessing Community Needs				4
	0516-475 Interviewing and the Helping Relationship . . .				4
	1004-212HumanBiologyII				4
	1016-319 Data Analysis				4
	One Professional Elective			4	
	One Liberal Arts Elective		4		
	One Liberal Arts Concentration Course			4	
	"Physical Education		0	0	0
4	0516-099 Social Work Program Seminar		0	0	0
	0516-505 Assessment and Problem Solving		4		
	#0516-506 Field Instruction I		5		
	0516-527 The Supervisory Process		4		
	0516-535 Advanced Social Work Research . . . . '		4		
	0516-550 Social Intervention			4	
	#0516-551 Field Instruction II			5	
	0516-560 Managing Community Services			4	
	0516-595 Policy and Planning Processes				4
	0516-598 Professional Seminar				4
	Two Professional Electives	4			4
	Two Liberal Arts Electives	8			
	Two Liberal Arts Concentration Courses	4			4
	0520-501 Liberal Arts Senior Seminar				2

#Full-time placement in a social work agency
'See page 176 for policy on Physical Education.

Bilingual opportunities
The social work curriculum offers students the flexibility of acquiring skills in a second language, if they choose. The most popular and easiest to acquire is sign language with deaf individuals since students participate in the living laboratory of integrated education during the entire time they are at RIT. Increasingly valuable as a second language for social workers is Spanish. Students can acquire proficiency in Spanish through choosing an appropriate liberal arts concentration or electives. Either of these options prepare the graduate to seek bilingual social work positions.

Graduate Education: courses and opportunities
In the Spring Quarter of the 1985-86 academic year, RIT began offering graduate social work courses at the Henrietta campus for the School of Social Work at the State University of New York at Buffalo (SUNYAB)." These courses cover most of the first year of the two-year MSW program of SUNYAB, and are designed for the student who does not have a baccalaureate preparation in social work.

BS in Economics Program

Dr. Michael Vernarelli, Program Chairperson

The BS in economics degree emphasizes the quantitative analytical approach to dealing with economic problems in both the private and public sectors. This emphasis provides students with marketable skills and the intellectual foundation for career growth. The main feature which distinguishes the BS in economics from other, traditional economics degrees is that our curriculum prepares students for the world of work 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 in co-op and after graduation.

Curriculum

Students take rigorous and challenging required courses which are specifically designed to develop the ability to apply economic analysis to real world problems. Required communication courses enhance the student's ability to communicate in oral and written form. The business courses which are part of the program include accounting, finance, and management science. Quantitative analytical skills are developed by a course sequence including computer science, mathematics and statistics.

Professional electives which allow students to pursue advanced study in their individual areas of interest are available through the program. Along with finance, marketing, mathematics, statistics, or computer science, are many other possibilities, limited only by the student's creativity in designing a personalized program of study.

Study environment

The economics faculty serve as mentors who are readily available to enhance students' personal and professional growth. Students in the program have the opportunity to work as research assistants for the faculty, learning about research techniques using a hands-on approach. Students working as research assistants receive a stipend.

Yr.	BS DEGREE IN ECONOMICS	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	GSSE-301,302,303 Principles of Economics I, II, III	4	4	4
	SMAM-225,226 Algebra and Calculus for Management Science OR SMAM-204,214 College Algebra & Trigonometry and Introduction to Calculus	4	4	
	BBUA-3Q1,302 Financial and Managerial Accounting		4	4
	ICSS-200 Survey of Computer Science			4
	"Liberal Arts (Core)	8	4	4
	tPhysical Education	0		
2	GSSE-523 Monetary Analysis and Policy	4		
	Science Requirement		4	4
	ICSA-208 Introduction to Programming	4		
	ICSA-210 Program Design and Validation		4	
	BBUQ-330 Data Analysis	4		
	GSSE-528 Applied Econometrics		4	
	GSSE-526 Research Methods for Economics			4
	GLLC-440 Human Communication			4
	"Liberal Arts (Core)	4	4	4
	tPhysical Education	0		
3	BBUQ-334 Management Science	4		
	GSSE-520 Intermediate Price Theory	4		
	GSSE-521 Intermediate Macroeconomic Theory		4	
	GSSE-529 Business Cycles & Economic Forecasting			4
	GSSP-501 Industrial Psychology			
	GSSS-443 Work and Society			4
	BBUF-441 Corporate Finance		4	
	Electives	4	4	4
	"Liberal Arts (Concentration). . . . . i_.	4	4	4
	GLLC-558 Technical Writing	4		
	GSSE-524 Industrial Organization	4		
	GLLC-402 Conference Techniques		4	
	GSSE-522 International Trade and Finance			4
	GSSE-527 Seminar in Applied Economics			4
			8	4
	"Liberal Arts (Electives & Senior Seminar)	6	4	4

'Seepage 118 for Liberal Arts requirements.
£ See page 176 for policy on Physical Education.

Cooperative education

Students in the economics program have the option of participating in co-op at RIT and may be placed with financial institutions, brokerage houses, government offices, and large corporations. Co-op can be taken during any quarter after the sophomore year including summer.

Opportunities for graduates

Graduates with a BS in economics are prepared for a wide variety of entry-level positions in management and quantitative analysis. Students are further prepared for graduate study in economics, business or law.

Requirements for the BS in economics degree

Students earning a BS in economics will be required to complete 190 credit hours of course work. The 190 credit hours include 48 credit hours of required economics courses in the College of Liberal Arts. The 12 required economics courses constitute the student's principal field of study. Students must maintain a 2.0 average for all Institute work and a 2.0 average in the principal field of study. Those students not maintaining the minimum grade point will be subject to academic probation or suspension according to Institute policy.

Professional and Technical Communication

Dr. Diane Hope, Program Chairperson

The BS in professional and technical communication combines education in the theory and practice of spoken, written and visual communication with extensive instruction in one of RIT's existing professional or technical programs. Students in this program develop practical communication skills grounded in sound theoretical knowledge along with a working familiarity with the central concepts and processes of a particular professional/technical field.

Graduates of the program are qualified to serve a number of different functions as communication specialists within a specific professional area. Their career opportunities are numerous and varied. The degree also prepares students for graduate work in communication and other related fields.

Need for the program

Numerous surveys and studies highlight the importance of effective communication in the technical and specialized world of business and industry. Today, employees use communication skills more than any others in their jobs, and the use of these skills becomes more frequent and more important with increasingly responsible positions. As knowledge becomes more technical and specialized, there is a growing need to communicate this knowledge to wide and diverse audiences. As communication media make the world more interdependent, there is need for college graduates not only skilled in how to communicate but equipped with a theoretical understanding of the principles of communication and the changing contexts in which those principles can be applied.

In addition to their work in the theory and practice of communication, totalling 76 quarter credits (52 required credits and 24 elective credits), students also take 28 quarter credits in another professional or technical discipline (professional core). So far, the program includes professional core areas in business, computer science, photography, science, and printing.

Their course work in the professional core gives the students sufficient familiarity with the vocabulary and methodologies of that field to communicate both with specialists within the field and with the general public about the work of specialists. Studies and discussions with.employers indicate that this ability to communicate specialized knowledge to non-specialist audiences will become even more important in the future.

The program includes two quarters of cooperative education, which gives students an opportunity to apply knowledge gained in class to a work situation in business or industry. RIT's considerable experience with cooperative education indicates that cooperative education deepens the students' knowledge of their field, allows them to determine their suitability for a particular kind of position, and increases chances for an advantageous placement upon graduation.

The program combines the liberal arts education expected of RIT undergraduates with a thorough education in communication and substantial exposure to a professional core. Therefore, graduates of the program will possess knowledge of practiced applications that will enhance their employability and their effectiveness in their jobs.

Curriculum

The following curriculum description displays the course distribution by academic area. The chart indicates the sequence for the required courses in the program.

Required communication courses (52 total credit hours)
Mass Communications
Human Communication
Effective Speaking
Conference Techniques
Writing and Thinking
Persuasion
Theories of Communication
Visual Communication
Organizational Communication
Technical Writing
Professional Writing
Research Methods I and II
Senior Thesis in Communication

Other Required Courses (52 total credit hours)

	Credit hours
Professional Core	28
Science	8
Math	8
Computer Science	4
Statistics or Math or Science	4

Communication Electives (24 total credit hours; four credit hours a course)
Liberal Arts (54 total credit hours)

Communication electives

Students in the program are required to take several communication electives, which may include the following:

Intercultural Communication, GLLC-521
Uses and Effects of the Mass Media, GLLC-515
Persuasion and Social Change, GLLC-522
Newswriting, GLLC-517
Creative Writing, GLLC-518
Small Group Communication, GLLC-441
Advanced Public Speaking, GLLC-526
Film and Society, GLLC-512
Advanced Creative Writing, GLLC-519
History of the English Language, GLLC-445
Interviewing, GLLC-513
Interpersonal Communication, GLLC-523
Communication and Documentary Film, GLLC-524
Teleconferencing Communications Management, GLLC-527
Advanced Technical Writing
Nonverbal Communication
Public Relations
Rhetorical Theory and Criticism
History of Communication: • Changing Topics (e.g., History of Public Address, History of Communication Technologies, History of Broadcasting)
Special Topics in Communication: (e.g., Communication Technologies, Listening, Semiotics, Interviewing, Legal Communication, Censorship and Propaganda)

Students in Professional and Technical Communication are required to take one professional core as part of their degree requirements. At present there are five professional core options available. Each is composed of seven courses for a total of 28 credit hours. Following is an outline of the five options. Although prerequisites are required for some of the courses, not all of them are listed here.

College of Business

Basic courses

BBUA-301 Financial Accounting

BBUB-430 Organizational Behavior (prereq.; junior status)

BBUM-463 Principles of Marketing (prereq.; junior status)

Management track

BBUB-438 Business Ethics (prereq. BBUB-430; junior status)

BBUB-455 Human Resources Management (prereq. BBUB-430; junior status)

BBUB-480 Training and Development (prereq. BBUB-455; junior status)

BBUB-490 Entrepreneurship (prereq. ; junior status)

Marketing track

BBUM-505 Consumer Behavior (prereq. BBUM-463; junior status)

BBUM-553 Sales Management (prereq. BBUM-463; junior status)

BBUM-555 International Marketing (prereq. BBUM-463; junior status)

BBUM-560 Marketing Communication (prereq. BBUM-463; junior status)

Finance track

BBUA-302 Managerial Accounting (prereq. BBUA-301)

GSSE-301 Principles of Economics

BBUQ-330 Data Analysis (prereq. SMAM-226; ICSA-200)

BBUF-441 Corporate Finance (prereq. BBUA-302; GSSE-301; BBUQ-330; junior status)

General track

BBUA-319 Legal Environment of Business

BBUM-505 Consumer Behavior (prereq. BBUM-463; junior status)

BBUM-560 Marketing Communications (prereq. BBUM-463; junior status)

BBUB-455 Human Resources Management (prereq. BBUB-430; junior status)

BBUB-490 Entrepreneurship (junior status)

Yr.	BS IN PROFESSIONAL AND TECHNICAL COMMUNICATION	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR
1	0502-440 Human Communication	4			
	0502-220 English Composition	4			
	0502-501 Effective Speaking		4		
	Computer Science: Survey of Computer Science	4			
	Math Requirement	4	4		
	Liberal Arts: Humanities		4	4	
	Liberal Arts: Social Science			4	
	Professional Core		4	4	
	Liberal Arts: Literature			4	
2	0502-402 Conference Techniques	4			
	0502-443 Writing and Thinking	4			
	Science Requirement (sequence in one science)	4	4		
	0502-510 Visual Communication			4	C
	Professional Core	4	4		O
	Liberal Arts: Humanities		4		O
	Liberal Arts: Social Science		4		P*
	0502-442 Persuasion			4	
	0502-514 Mass Communication			4	
	Math or Science			3-4	
3	0502-504 Theories of Communication	4			
	0502-505,506 Research Methods I and II	2	2	C	
	0502-444 Technical Writing		4	O	
	Liberal Arts Concentration	4	4	O	
	Professional Core	4	4	P*	
	Communication Elective	4	4		
4	0502-508 Organizational Communication			4	
	0502-509 Senior Thesis in Communication			4	
	0520-501 Senior Seminar		2		
	Liberal Arts Elective	4	4	4	
	Communication Elective	4	8		
	Liberal Arts Concentration	4			
	Professional Core	4			
	Writing Elective			4	
	0502-507 Professional Writing		4		

' Co-op scheduling is flexible and can be completed whenever requirements are met.

Computer Science

Core courses

ICSS-200 Survey of Computer Science

ICSS-208 Introduction to Programming

ICSS-210 Program Design and Validation

Electives

ICSP-300 Business Applications Using COBOL

ICSP-303 Advanced Business Applications

ICSS-410 Computer Concepts and Software Systems

ICSS-411 Data Communications and Computer Networks

ICSS-483 Applied Database Management

ICSS-525 Assemblers, Interpreters, and Compilers

School of Photographic Arts and Sciences

Imaging and Photographic Technology

Core Courses

PPHT-211, 212, 213 Material and Processes of Photography

PPHM-201, 202, 203 Basic Principles of Photography

Electives (providing prerequisites are met)

PPHT-311 Color Photography/ Design

PPHT-312 Color Printing/Theory

PPHT-341 Introduction to Photography for Publications

PPHT-425 Nature Photography

PPHT-444 Reversal Color Printing

Applied Photography

PPHL-205, 206 Creative Problems

PPHL-437, 438, 439 Visual Communications Workshop

PPHL-207 Introduction to Color

No number assigned History of Applied Photography

No number assigned Studio Practices

Film/Video
PPHF-207, 208 Introduction to Portable Video I and II
PPHF-204, 205, 206 History and Aesthetics of the Moving Image
PPHF-551 Introduction to Film Production
(other courses will be open if not filled by F/V majors)

Fine Arts Photography
PPHA-207, 208, 209 Still Photography
PPHA-313 Introduction to Fine Arts
PPHA-531 Picture Researching
PPHA-561 Semiotics and Photography

College of Science
The mathematics foundation and basic science sequence would depend on what option students would pursue, but students would need to take three mathematics courses (allowed for in the curriculum) and three basic science courses (the curriculum requires two). Students would also take an additional basic science sequence from the list of basic science sequences.

- **Biology**
  SBIB-201, 202, 203 General Biology
  SBIB-205, 206, 207 General Biology Laboratory
- **Chemistry**
  SCHG-211, 212 Chemical Principles I, II
  SCHG-205, 206 Chemical Principles Laboratory
  (SCHG-213) Introduction to Organic Chemistry
  SCHG-207 Introduction to Organic Chemistry Laboratory
- **Physics**
  SPSP-311, 312, 313 University Physics
  SPSP-375, 376, 377 University Physics Laboratory

In addition students would take an additional sequence in one of these sciences.

- **Biology**
  SBIB-304 Botany
  or
  SBIB-340 Ecology
  plus
  SBIB-305, 306 Physiology and Anatomy
- **Chemistry**
  SCHO-231, 232, 233 Organic Chemistry
  SCHO-235, 236, 237 Organic Chemistry Laboratory
- **Physics**
  SMAM-305 Calculus
  SPSP-314 Introduction to Modern Physics
  SPSP-341 Foundations of Scientific Thinking

Printing
Core requirements: 12 credits
PPRM-230 Printing Process Concepts
PPRM-250 Concepts of Design and Typography
PPRM-270 Prepress Imaging Concepts

The remaining 16 credits are chosen in a printing concentration emphasizing Process, Design or Imaging.

Graduation requirements
Students earning a BS in professional and technical communication are required to complete 181-182 quarter credit hours. These hours include 54 hours of liberal education courses in the College of Liberal Arts, 52 hours of required communication courses plus 24 hours of communication electives, 28 credit hours in a professional core, 8 hours of mathematics and 8 hours of a science sequence plus an additional 4 hours of either mathematics or science as well as 4 hours in computer science. In addition two quarters of co-op must be completed. Students must meet Institute requirements in physical education.

The student's principal field of study is defined as the 14 required communication courses listed on the previous page, the six communication electives chosen from the list on the previous page, and all courses in the student's professional core.

Students in this program may not choose the language concentration to meet the requirements of their 54 hours of liberal arts curriculum.

Students must maintain a 2.0 average for all Institute work and a 2.0 average in the principal field of study.

The Technical and Liberal Studies Option

Dr. Katherine Mayberry, Program Chairperson

Students often are attracted to RIT because of the opportunity to specialize in a career-oriented or technical program beginning with their first year of college. Most freshmen or transfer students have chosen a career area by the time they have been accepted for admission to RIT. Others, however, may be considering a technical, career-oriented education, but want an opportunity to explore several fields before making a decision about a particular career objective.

The major goal of the technical and liberal studies option is to help students formulate an educational career plan or decide on the next steps compatible with their still emerging plans. Such steps might include entering one of RIT's degree programs, applying to another college or university for a program not offered at RIT, or—possibly—deciding to prepare for a career not requiring a college degree.

In addition to sampling introductory and foundation courses in one or more of RIT's departments, full-time technical and liberal studies students enroll for liberal arts courses in the humanities, social sciences, and mathematics. They also take a one-credit seminar, Academic Fields of Study, in which they are exposed to the full array of degree programs offered by RIT.

For example, during the first quarter in the program, a student might enroll in a beginning printing course (such as Typography I or Layout and Printing Design). In order to leave other options open while earning additional college credit, the student might also register for two required liberal education courses (such as History and Introduction to the Visual Arts).

Another student may be fairly certain he or she wants to be either an accountant or a scientist, but needs further information about these fields in order to consider goals and values more thoroughly. After academic advising he or she may decide to spend a year in the technical and liberal studies option, sampling both accounting and science courses.

Depending upon available classroom space and students' academic readiness, technical and liberal studies students may sample courses in any major area represented by RIT departments, although possibilities for exploration in art, crafts, engineering and photography are very limited.

Students who select this option must, of course, meet standards and requirements of the RIT schools and colleges to which they might eventually apply. Some additional time may be necessary to complete degree requirements because the technical and liberal studies student has spent time in pre-. liminary exploration.

Of the 12 courses that a student would take during three quarters in the technical and liberal studies option, however, at least nine would be required in any RIT baccalaureate degree program. Therefore, the maximum "loss of time," no matter what the student's final program choice, will not be too severe.

Each student will be assisted by a faculty academic advisor. The dean of the college also will work directly with any student who has special difficulties in selecting a career path and degree program.

After one academic year (one to four quarters), each student may reasonably anticipate:

—A clearer basis for making a decision regarding long-range career plans;

—Credit for courses which would most likely apply to RIT degree programs or to programs at other colleges;

—Assistance in matriculating in 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.

By special permission a student may enroll for portions of this program on a part-time basis.

College of Science

Dr. John D. Paliouras, BA

Undergraduates in the College of Science receive an unusual education, one that emphasizes the applications of science and mathematics in the professional world while still providing a comprehensive liberal arts education in the humanities and social sciences. The College of Science curricula, under the direction of our faculty members, reflect modern trends in the applications of science and mathematics while preparing students for graduate study, as well as immediate employment in business, industry, and the allied health professions.

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 social sciences, English composition, literature, history, philosophy, and fine arts for the intellectual enrichment of our students. In addition to technical competence, many of the skills acquired through the study of these liberal arts subjects are required by employers for promotion and career advancement.

Faculty and research

The College of Science has an ideal size and philosophy to provide a quality education. We have nearly 90 faculty members in the sciences, health professions, and mathematics. All our faculty members are committed to the education of undergraduate students; most hold the Ph.D. degree. They provide a variety of faculty expertise, so a student is likely to find a faculty member with similar interests to act as a mentor and friend.

Our faculty members are dedicated teachers who also practice their professions outside of the classroom in research and other professional activities. Our undergraduate students are encouraged to work with faculty members as they pursue their research. A number of joint student-faculty research projects have resulted in publication in professional literature.

Facilities and resources

The Chester F. Carlson Memorial Building, built in 1968, houses the College of Science. In addition to an auditorium and nine classrooms, there are 22 teaching laboratories and 16 research laboratories that provide space for laboratory course work and student research projects. Some of the facilities within the building have specialized purposes. For example, we have a laser-optics laboratory, an animal care facility, a diagnostic imaging laboratory, a plasma etching laboratory, three greenhouses, an electronics laboratory, a nuclear magnetic resonance laboratory, and an electron microscope center. All of these facilities are used by undergraduate students.

The Science Library, located on the third floor of the Carlson Building, is a favorite student study area and houses some of the chemistry library collection. The RIT Wallace Memorial Library has a large collection of books and journals in science, mathematics, and health care fields.

State-of-the-art computer facilities are available to all students at RIT. This is a valuable resource for College of Science programs that use the computer as a tool in the applications of mathematics, health-related work, and science.

Academic advising

Each student who enrolls in a College of Science program is assigned an academic advisor who provides counsel on course selection, advice about careers, and information about RIT services. Most of our faculty members serve as academic advisors. It is not unusual for a College of Science major to have several friends among the faculty who help with academic, career, and personal questions.

Undeclared major

The student who has decided upon a specific major field will indicate a choice when applying for admission to RIT and, upon admittance to the Institute, will be enrolled as a candidate for a degree in that field.

Many high school students, however, don't know which major they prefer. We encourage such students to come to RIT if they have a strong interest in science and mathematics.

A student may apply to RIT's College of Science as an Undeclared Science major without designating a specific major. The undeclared science option allows a student to postpone a definite commitment to a particular major in science or mathematics without any loss of time toward a degree. This option has been attractive to quite a few high school students.

Below is a typical distribution of courses for the undeclared science option. The program covers a number of introductory college-level courses in science and mathematics and can be tailored to meet a student's interests. An academic advisor assists the student in selecting courses and identifying a major field of interest in which to enroll.

Prior to the end of the first year, the student should decide upon a specific major and then enroll as a candidate for a degree. Most students in our undeclared science option find the decision is easily made after only a quarter or two of course work.

Yr.	UNDECLARED SCIENCE OPTION	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	"SBIB-201,202,203 General Biology Lec	3	3	3
	SBIB-205,206,207 General Biology Lab	1	1	**1**
	'SCHC-251,252,253 General Chemistry Lec. I, II, III	3	3	3
	SCHA-261,262,263 Intro, to Chemical Analysis I, II, III	3	3	3
	SMAM-251,252,253 Calculus I, II, III	**4**	**4**	**4**
	•SPSP-311,312 University Physics I, II		**4**	**4**
	SPSP-375,376 University Physics Lab I, II		1	**1**
	"Liberal Arts (Core)	**4**	**4**	**4**
	tPhysical Education Electives	0	0	0

'Any two of these three in a given quarter.
" See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Our graduates
The best way to evaluate college programs is to look at the success of the graduates. In recent surveys of our graduates, more than 90% responded that they are employed in a field related to their degree and more than 90% expressed satisfaction with their work.

Employers of our graduates report that they have good preparation for employment in business and industry and, because of their work experience, immediately fit into their jobs with a high degree of initiative and seriousness of purpose.

About one-fourth of our graduates enter graduate or professional school after graduation. We have found that they do exceedingly well. Many find that, because of their laboratory and co-op experience, they can move into their graduate research projects more easily than their classmates.

The cooperative plan
In our cooperative education plan (co-op), a student alternates quarters of paid work with quarters on campus in academic study for two or three years. Co-op employment experience in a student's field of study has many advantages.

Through co-op, students often gain insights that help them with classroom work. Co-op gives students a chance to find out what working in their chosen fields is really like. Acquiring practical experience that is valuable in getting a job or into graduate school after graduation is another benefit of co-op. Income from this work-study program enables students to obtain a high quality education at a cost often comparable to a public education.

Although co-op is not required in any of our programs, many students elect this five-year plan, which works as follows. RIT's school year is divided into four 11-week quarters: Fall, Winter, Spring, and Summer. Students in the five-year co-op programs in biology, biotechnology, applied mathematics, applied statistics, computational mathematics, biomedical computing, and physics programs attend classes during the fall, winter, and spring of their first two years. During the last half of the second year, the student works with the Office of Cooperative Education and Placement in obtaining a co-op position. At the beginning of the third year the student begins alternating quarters of work and study, as shown in the accompanying diagrams. Some students are on the A-block schedule and others on the B-block. Students in the five-year chemistry and polymer chemistry co-op plans follow the same kind of schedule, except that their co-op experience starts at the beginning of the second year.

Cooperative Schedule for Five-Year Program in Biology, Biotechnology, Mathematics, Physics*, and Biomedical Computing

Year		Fall	Winter	Spring	Summer
1 and 2		RIT	RIT	RIT	Vacation
3 and 4*	A	RIT	Work	RIT	Work
	B	Work	RIT	Work	RIT
5*	A	RIT	Work	RIT	-
	B	Work	RIT	RIT	-

Cooperative Schedule for Five-Year Chemistry and Polymer Chemistry Programs

Year		Fall	Winter	Spring	Summer
1		RIT	RIT	RIT	Vacation
2,3 and 4	A	RIT	Work	RIT	Work
	B	Work	RIT	Work	RIT
5	A	RIT	Work	RIT	-
	B	Work	RIT	RIT	-

•Physics majors ordinarily are all on A-block.

The internship plan
Students in the medical technology, nuclear medicine technology, and diagnostic medical sonography (ultrasound) programs do not participate in co-op. Instead these students spend three years on campus in academic work and then gain invaluable clinical experience during the fourth year at a clinical training site.

The transfer plan
Students with associate's degrees in a comparable program from other educational institutions normally can expect to transfer at the junior year level. Transfer credit is granted for those studies which parallel Institute courses in the curriculum for which admission is sought.

Transfer students applying for a program at RIT similar to their previous college study are expected to present an accumulative average of "C" or above. Students making significant program changes will be evaluated on the probability of their success in the new program with the grades earned in previous study only a part of the criteria.

It is also RIT policy to grant credit by examination, in lieu of course credit, for subjects that parallel the objectives and content of courses for which advanced credit is being sought. Contact the director of admissions for policy and procedures.

Graduate degrees
The College of Science offers master of science degrees in chemistry and clinical chemistry. A master of science in materials science and engineering is offered jointly by the College of Science and the College of Engineering.

Premedical studies
A student interested in entering a professional school of medicine, dentistry or veterinary science after completing a baccalaureate degree may enroll in any BS program in the College of Science and combine that program's course requirements with what we call the premedical core (see chart below). The premedical core is a set of courses required for admission to most medical, dental, and veterinary schools in the United States. These courses should be completed by the end of the third year or prior to the time the student expects to take the MCAT, DAT, VAT, or other admissions tests required for entrance to a professional school.

Freshman Admission Requirements **Transfer Admission**

Program	Required High School Subjects*	Desirable Elective Subjects	Some Recommended Course Work
Applied Mathematics **Computational Mathematics** **Applied Statistics**	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Chemistry or Physics	Physics or Chemistry; additional mathematics	Differential, integral, and multivariate calculus; differential equations; matrix and linear algebra; discrete mathematics; laboratory science courses; FORTRAN, PASCAL, or Modula-ll and other computer science courses.
Biology	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Biology; Chemistry	Physics; additional mathematics; Computer Science	General biology and other biology courses, general chemistry, organic chemistry, calculus
Biomedical Computing	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Biology	Physics; Chemistry; additional mathematics; Computer Science	General biology, general chemistry, calculus, FORTRAN and other computer science courses, human anatomy and physiology
Biotechnology	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Biology; Chemistry	Additional mathematics; Computer Science; Physics	General biology, microbiology, genetics, general chemistry, organic chemistry, calculus
Chemistry	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Chemistry	Physics; additional mathematics	General chemistry, organic chemistry, quantitative analysis, calculus, physics (calculus-based)
Medical Technology	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Biology	Physics or Chemistry	General chemistry, general biology, general physics, mathematics, organic chemistry, human anatomy and physiology
Nuclear Medicine Technology	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Biology; Chemistry	Additional science and mathematics	General biology, human anatomy and physiology, general chemistry, organic chemistry, general physics, mathematics
Diagnostic Medical Sonography	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; 2 years lab science	Additional mathematics and science	General biology, human anatomy and physiology, chemistry, general physics, mathematics
Physics	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics or Chemistry	Chemistry or Physics; additional mathematics	Physics (calculus-based), modern physics, general chemistry, calculus, differential equations, computer programming
Polymer Chemistry	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Chemistry	Physics; additional mathematics	General chemistry, organic chemistry, quantitative analysis, calculus, general physics
Undeclared Science Option	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Lab science	Physics; Chemistry; Biology or additional mathematics	Not applicable

'Four years of English are required in all programs, except where state requirements differ.

Biology Program

Dr. G. Thomas Frederick, Head

The Department of Biology 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 laboratories, the pharmaceutical industry, food and agriculturally related industries and environmental organizations. The program also prepares students for the pursuit of degrees in the medical professions as well as graduate degrees in a variety of biological disciplines.

Yr.	BIOLOGY, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SBIB-201,202,203 General Biology Lecture	3	3	3
	SBIB-205,206,207 General Biology Laboratory	1	1	1
	SCHG-215,216,217 General Analytical Chemistry Lecture	3	3	3
	SCHG-225,226,227 General Analytical Chemistry Laboratory	1	1	2
	SMAM-214,215 Introduction to Calculus	3	3	
	ICSA-200 Survey of Computer Science			4
	'Liberal Arts (Core)	4	4	4
	tPhysical Education Electives	0	0	0
2	SBIB-340 General Ecology	4		
	SBIB-304 Botany	4		
	SCHO-231,232,233 Organic Chemistry Lecture	3	3	3
	SCHO-235,236,237 Organic Chemistry Laboratory	1	1	1
	SBIB-230 Introduction to Co-op Seminar		1	
	SMAM-309 Statistics			4
	Biology Electives		4	4
	'Liberal Arts (Core)	4	8	4
	tPhysical Education Electives	0	0	0
		VARIABLE QUARTERS		
3" 4 5	SBIB-350 Molecular Biology	4		
	SBIB-370 Biological Writing	2		
	SBIB-404 Introductory Microbiology	5		
	SBIB-421 Genetics	4		
	SBIB-550 Biology Seminar	2		
	SPSP-211,212,213 College Physics Lecture	9		
	SPSP-271,272,273 College Physics Laboratory	3		
	Zoology Elective	4		
	Physiology Elective	4		
	Biology Elective	7		
	"Liberal Arts (Concentration)	12		
	"Liberal Arts (Electives)	12		
	"Liberal Arts (Senior Seminar)	2		
	Institute-wide Electives	15		

'See page 188 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.
"Course scheduling varies

Requirements for the BS degree in biology

The student must meet the minimum graduation requirements of the Institute as described on page 171 of this bulletin. In addition, the program requires the successful completion of a total of 60 quarter credit hours in biology. A required core of courses comprises 46 quarter credit hours in biology (General Biology, Introduction to Co-op, General Ecology, Botany, Introductory Microbiology, Genetics, Biology Seminar, one course in zoology, one course in physiology and Biological Writing). The remaining 14 hours are selected from biology electives.

Additional requirements for the BS degree in biology include a minimum of six courses in chemistry including three in general analytical and three in organic chemistry. A minimum of three courses in physics, one course in computer science, three courses in mathematics including two calculus and one statistics course, and one course to introduce the student to cooperative education are also required.

For more information on AS and BS degree requirements, contact the head of the Department of Biology.

Specialization areas

In conjunction with a faculty advisor, individual student programs can be established to meet personal goals and career objectives. Because these areas are designed around the common core curriculum, the student has the added advantage of being prepared for alternate career goals, should the situation arise. The following specialization areas are available at RIT:

1. Biological Research. This program, which includes a variety of courses such as toxicology, radiation biology, animal surgery, histology, electron microscopy and tissue culture, leads to employment in laboratories engaged in pure and applied biological research or in clinical and medical research.

2. Pre-professional. Students interested in careers in medicine, dentistry, veterinary science, optometry and podiatry can satisfy the requirements for admission to professional schools by majoring in biology at RIT. Elective courses would include comparative anatomy, surgical techniques, histology, toxicology, radiation biology, electron microscopy, virology, antibiotics and chemotherapy, and parasitology.

3. Post-graduate. A student achieving the BS degree in biology at RIT will have the essential prerequisites for entry into most universities offering advanced degrees in biological sciences. Electives such as independent study and undergraduate research can further enhance preparation for graduate programs.

4. Microbiology. This is similar to the biological research program, but emphasizes microbiological aspects that lead to careers in clinical laboratories, in food and drug quality control and in wastewater and sewage treatment facilities.

5. Environmental Science. This track prepares students for careers in ecological research and management in areas such as conservation, field biology and environmental toxicology. Students may pursue terrestrial, freshwater and marine science options.

6. Medical Technology. It is possible for a student to complete a BS degree program in biology in four years and complete internship and examination requirements for medical technology certification in the fifth year. The arrangement provides the student with a variety of options: a career as a medical technologist or a research technician, or entry into graduate or professional training.

Biotechnology Program

Dr. G. Thomas Frederick, Head

The Department of Biology offers a program leading to the BS degree in biotechnology. This undergraduate program is one of only a few such programs in the United States.

Students learn the modern techniques and applications of genetic engineering, monoclonal antibodies, industrial fermentation, molecular biology, genetics (general, microbial and viral), plant and animal cell and tissue culture, biochemistry and cell physiology.

Graduates of the program are prepared for employment as technologists and assistant scientists in industrial and academic research laboratories in the field of biotechnology. Industries that employ biotechnologists include those involved in pharmaceuticals, agriculture, chemistry, food production and energy. The program also prepares students for entrance into advanced degree programs in biotechnology or related areas.

Requirements for the BS degree in biotechnology

The student must meet the minimum graduation requirements of the Institute as described on page 171 of this bulletin. In addition, the program requires the successful completion of 69 quarter credit hours in biology (General Biology, Introduction to Biotechnology, Introduction to Co-op, Tissue Culture, Plant Cell and Tissue Culture, Molecular Biology, Introductory Microbiology, Immunology, Hybridoma Techniques, Genetics, Plant Physiology, Microbial and Viral Genetics, Cell Physiology, Industrial Microbiology, Genetic Engineering, Tbpics in Biotechnology, and Biological Writing.

Additional requirements include general and analytical chemistry, organic chemistry, two courses in biochemistry, analytical chemistry separations, two courses in calculus, one in statistics and one in computer science.

For information on AS and BS degree requirements, contact the head of the Department of Biology.

Yr.	BIOTECHNOLOGY, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SBIB-201,202,203 General Biology Lecture	3	3	3
	SBIB-205,206,207 General Biology Laboratory	1	1	1
	SBIB-250 Introduction to Biotechnology		1	
	SCHG-215,216,217 General Analytical Chemistry Lecture	3	3	3
	SCHG-225,226,227 General Analytical Chemistry Laboratory	1	1	2
	SMAM-214,215 Intro. toCalculus	3	3	
	SMAM-309 Statistics			4
	"Liberal Arts, (Core)	4	4	4
	Education Electives	0	0	0
2	SBIB-445 Tissue Culture	4		
	SBIB-446 Plant Tissue and Cell Culture		4	
	SBIB-350 Molecular Biology			4
	SCHO-231,232,233 Organic Chemistry Lecture	3	3	3
	SCHO-235,236,237 Organic Chemistry Laboratory	1	1	1
	ICSA-200 Survey of Computer Science	4		
	SCHA-312 Analytical Chemistry-Separations Lec			3
	SCHA-319 Analytical Chemistry-Separations Lab			1
	SBIB-230 Introduction to Co-op Seminar		1	
	"Liberal Arts (Core)	4	8	4
	IPhysical Education Electives	0	0	0
		VARIABLE QUARTERS		
3*	SBIB-310 Plant Physiology	4		
4	SBIB-370 Biological Writing	2		
5	SBIB-402 Immunology	3		
	SBIB-403 Cell Physiology	4		
	SBIB-404 Introductory Microbiology	5		
	SBIB-407 Microbial/Viral Genetics	4		
	SBIB-417 Industrial Microbiology	4		
	SBIB-421 Genetics	4		
	SBIB-442 Hybridoma Techniques	2		
	SBIB-450 Genetic Engineering	5		
	SBIB-579 Topics in Biotechnology	3		
	Biology Electives	3		
	Biochemistry Electives	6		
	"Liberal Arts (Concentration)	12		
	"Liberal Arts (Electives)	12		
	"Liberal Arts (Senior Seminar)	2		
	Institute-wide Electives	8		

•Course scheduling vanes.
"See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Chemistry Programs

Dr. Gerald A. Takacs, Head

The Department of Chemistry offers programs leading to the AS and BS degrees in chemistry, the BS degree in chemistry (biochemistry option), the BS degree in polymer chemistry, and the MS degree in chemistry.

Chemistry

The five-year cooperative program in chemistry leads to the bachelor of science degree and has been approved by the Committee on Professional Training of the American Chemical Society. The program prepares graduates for positions in the 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 fraction of graduates continue their education for 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 Institute-wide elective courses taken by the student. For example, it is highly recommended that students take the undergraduate chemistry research courses as Institute-wide elective credits. The program also provides students with the option of planning an elective concentration in complementary fields such as photoscience, business, graphic arts, audio visual communications, biology, criminal justice, engineering, environmental studies, packaging science, printing, computer science, physics or mathematics. Students may also elect to complete the BS degree requirements in a traditional (non-cooperative) four-year program.

Biochemistry option

The biochemistry option is an exciting variation of the chemistry program available to students who have an interest in combining the life and health sciences with a chemistry degree. Students pursuing this option take a year of general biology in addition to a typical chemistry curriculum during the first two or three years. During the upper-class years, students in the biochemistry option take a substantial core of biochemistry courses, physical chemistry, chemical literature, liberal arts, and elective courses in biology, biotechnology, and clinical sciences.

Employment opportunities for chemistry graduates with the biochemistry option 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.

Yr.	CHEMISTRY*, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SCHC-200 Chemical Safety	1		
	SCHC-230 Intro, to Co-op Seminar	1		
	SCHC-251,252,253 General Chemistry I, II, III	3	3	3
	SCHA-261,262,263 Intro, to Chemical Analysis	3	3	3
	SMAM-251,252,253 Calculus I, II, III	4	4	4
	ICSA-205 Computer Techniques		3	
	"Liberal Arts (Core)	4	4	**8**
	Education Electives	**0**	**0**	**0**
	.	**FALL WTR.**		**SPG. SMR.**
2	SCHA-311 Instrumental Analysis	3		
	SCHA-318 Instrumental Analysis Lab	1		
	SCHA-312 Separations Techniques			3
	SCHA-319 Separations Techniques Lab			**1**
	SMAM-305 Calculus IV	4		
	SCHO-431 Organic Chemistry I			3
	SCHO-435 Preparative Organic Chemistry I Lab			2
	SPSP-311,312 University Physics	4		4
	SPSP-375,376 University Physics Lab	1		1
	'Liberal Arts (Core)	4		4
	Education Electives	**0**		**0**
3	SCHC-301 Elements of Chemical Research	1		
	SCHP-340 Intro, to Physical Chemistry	3		
	SMAM-306 Differential Equations	4		
	SPSP-313 University Physics			4
	SPSP-377 University Physics Lab			1
	SCHO-432,433 Organic Chemistry II, III	3		3
	SCHO-436 Preparative Organic Chemistry II Lab	2		
	SCHO-437 Systematic ID of Organic Compounds III Lab			2
	SCHP-441 Physical Chemistry I (Thermodynamics)			3
	SCH P-445 Physical Chemistry I Lab			1
	GLLC-530 German I			4
	"Liberal Arts (Core)	4		
	tPhysical Education Electives	**0**		
4	SCHP-442 Physical Chemistry II (Quantum)	3		
	SCHP-446 Physical Chemistry II Lab	**1**		
	SCHP-443 Physical Chemistry III (Kinetics)			3
	SCHP-447 Physical Chemistry III Lab			1
	SCHC-401 Chemical Literature	2		
	SMAM-431 Matrix Algebra	4		
	SCHI-762 Inorganic Chemistry I			3
	GLLC-531 German II	4		
	"Liberal Arts (Concentration/Elective)	4		**8**
	Institute-wide Elective			V
5	SCHI-763,764 Inorganic Chemistry II, III	3		3
	SCHA-711 Advanced Instrumental Analysis	3		
	SCHA-720 Advanced Instrumental Analysis Lab	2		
	Chemistry Electives	3		3
	"Liberal Arts (Concentration)			4
	'Liberal Arts (Senior Seminar)	2		
	Institute-wide Electives	4		4

"See page 118 for Liberal Arts requirements.
†See page 176 for policy on Physical Education.

Polymer chemistry

Polymer science is one of the increasingly important areas of modern science. The polymer chemistry program 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. It is highly recommended that students take the undergraduate chemistry research courses as Institute-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 basic and applied research areas and also enables graduates to pursue further education in chemistry, polymer chemistry, or materials science and engineering.

Requirements for the BS degree

The student must meet the minimum graduation requirements of the Institute as described on page 171 and in addition must complete the requirements contained in the particular program listed herein or its equivalent as determined and approved by the Department of Chemistry.

To meet the requirements leading to the BS degree approved by the Committee on Professional Training of the Amerian Chemical Society, the student must take specifically designated courses in chemistry and related sciences and must complete a minimum of 187 quarter credit hours.

All students must meet the requirements for the Institute's writing policy, as specified by the Department of Chemistry.

For information on AS and BS degree requirements, contact the head of the Department of Chemistry.

Yr.	POLYMER CHEMISTRY, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SCHC-200 Chemical Safety	1		
	SCHC-230 Intro, to Co-op Seminar	1		
	SCHC-251,252,253 General Chemistry I, II, III	3	3	3
	SCHA-261,262,263 Intro, to Chemical Analysis	3	3	3
	SMAM-251,252,253 Calculus I, II, III	4	4	4
	ICSA-205 Computer Techniques		3	
	'Liberal Arts (Core)	4	4	8
	tPhysical Education Electives	0	0	0
		FALL WTR.		**SPG. SMR.**
2	SCHA-311 Instrumental Analysis	3		
	SCHA-318 Instrumental Analysis Lab	1		
	SCHA-312 Separations Techniques			3
	SCHA-319 Separations Techniques Lab			1
	SMAM-305 Calculus IV	4		
	SCHO-431 Organic Chemistry I			3
	SCHO-435 Preparative Organic Chemistry I Lab			2
	SPSP-311,312 University Physics	4		4
	SPSP-375,376 University Physics Lab	1		1
	"Liberal Arts (Core)	4		4
	tPhysical Education Electives	0		0
3	SCHP-301 Intro, to Polymer Technology	2		
	SCHP-340 Intro, to Physical Chemistry	3		
	SMAM-306 Differential Equations	4		
	SPSP-313 University Physics			4
	SPSP-377 University Physics Lab			1
	SCHO-432,433 Organic Chemistry II, III	3		3
	SCHO-436 Preparative Organic Chemistry II Lab	2		
	SCHP-441 Physical Chemistry I (Thermodynamics)			3
	SCHP-445 Physical Chemistry I Lab			1
	"Liberal Arts (Core/Concentration)	4		4
	tPhysical Education Electives	0		
4	SCHC-301 Elements of Chemical Research	1		
	SCHP-442 Physical Chemistry II (Quantum)	3		
	SCHP-446 Physical Chemistry II Lab	1		
	SCHP-443 Physical Chemistry III (Kinetics)			3
	SCHP-447 Physical Chemistry III Lab			1
	SCHC-401 Chemical Literature	2		
	SCHO-601 Organic Chemistry of Polymers	4		
	SCHP-605 Synthesis of High Polymers Lab	2		
	SCHI-762 Inorganic Chemistry I			3
	SCHP-602 Physical Chemistry of Polymers			4
	"Liberal Arts (Concentration)	4		4
5	SCHP-603 Struc./Prop. Relationships-Polymers	4		
	SCHP-604 Characterization of High Polymers Lab	2		
	Chemistry Electives	3		3
	"Liberal Arts (Electives)	4		8
	"Liberal Arts (Senior Seminar)	2		
	Institute-wide Electives	3		3

Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Mathematics and Statistics Programs

Dr. George T. Georgantas, Head

Over the past several years a growing demand has developed for mathematicians and statisticians with solid computer skills and broad-based quantitative backgrounds and interests. Indeed, mathematical and statistical theory is the basis for many fields of practical application, and employers need people whose education includes mathematics and any of the following: computer science, statistics, chemistry, physics, engineering, or business, to name a few.

The Department of Mathematics has established three BS degree programs in response to these long-term industry needs: applied mathematics, computational mathematics, and applied statistics. Each of these programs has been carefully designed to meet the needs of both students and their potential employers. Constant feedback from industry has enabled the department to continuously update its courses, programs and equipment in order to make sure students are well-trained in current techniques, equipment and applications. Industrial needs and trends are carefully discussed with employers in order to update the curricula, and graduates find that their RIT backgrounds seem tailor-made for their professional careers.

Employment opportunities for students in applied mathematics, computational mathematics and applied statistics are outstanding. Students typically become involved in research, consulting, or using computers to analyze complex physical problems that have been mathematically modeled, or using computers to do statistical analyses.

Examples of co-op and permanent jobs typically obtained by Department of Mathematics majors include the following:

analyst for mathematical modeling
statistician
mathematical statistician
demographics analyst
missile reliability analyst
software designer
scientific programmer
systems analyst
cryptographic mathematician
manufacturing engineering consultant
management science consultant
biological systems analyst
computer modeling consultant
graphics modeling consultant
simulations programmer
reliability analyst
statistical forecaster
robotics software specialist
data base programmer
data analyst
telecommunications analyst
software engineer
marketing analyst
aerospace systems analyst

Students in all three programs enjoy small classes and a low stude:nt/faculty ratio, and frequently get to know their teachers outside the classroom. Job opportunities for graduates are plentiful, and the department is proud of its outstanding record in placing students in both co-op and permanent jobs.

Yr.	APPLIED MATHEMATICS, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SMAM-210,211 Freshman Seminar	1	1	
	SMAM-251,252,253 Calculus I, II, III	4	4	4
	SMAM-305 Calculus IV			4
	ICSP-241 Programming I - Algorithmic Structures	. 4		
	ICSP-242 Programming II - Data Structures		4	
	ICSA-220 FORTRAN			4
	Science Electives	4	4	4
	"Liberal Arts (Core)	4	4	
	Education Electives	0	0	0
2	SMAM-306 Differential Equations I	4		
	SMAM-351 Probability	4		
	SMAM-352 Applied Statistics I		4	
	SMAM-399 Co-op Seminar		0	
	SMAM-265 Foundations of Discrete Mathematics		4	
	SMAM-338 Series Solutions for Diff. Equations, or			
	"SMAM-353 Applied Statistics II			4
	SMAM-431 Matrix Algebra			4
	"Liberal Arts (Core)	8	4	4
	Institute-wide Electives		4	4
	tPhysical Education Electives	0	0	0
		FALL WTR.		SPG. SMR.
3	SMAM-437 Computer Methods in Applied Math	4		
	SMAM-432 Linear Algebra	4		
	SMAM-461 Mathematical Modeling			4
	Mathematics Elective	4		8
	"Liberal Arts (Core/Concentration)	4		. 4
4	SMAM-411,412 Real Variables I,II	4		4
	Mathematics Electives	4		
	Applications Minor			4
	"Liberal Arts (Concentration/Electives)	4		8
5	SMAM-531,532 Abstract Algebra I, II	4		4
	Applications Minor	4		4
	"Liberal Arts (Electives)	4		4
	"Liberal Arts (Senior Seminar)			2

'Only if a statistics minor is elected.
"Seepage 118tor Liberal Arts requirements.
tSeepage 176 for policy on Physical Education.

Applied Mathematics

The applied mathematics program focuses upon the study and solution of problems that can be effectively analyzed through the use of mathematics. 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 provides them with the knowledge and skills necessary to collaborate on complex problems with scientists, engineers, computer specialists or other analysts. Some application minors are: applied statistics; biology; business; economics; chemistry; electrical; industrial or mechanical engineering; operations research; or imaging science.

Graduates typically are employed in scientific, engineering and business environments, applying their mathematics background in the analysis and solution of real-world problems.

Computational Mathematics
The computational mathematics program prepares students for a mathematical career that incorporates extensive skills in computer science. In this program, much emphasis is given to use of the computer as a tool in solving physical problems that have been mathematically modeled. Graduates of the program often choose positions as mathematical analysts, scientific programmers, software engineers or systems analysts. Job opportunities in private industry and government literally abound in this field!

Applied Statistics
The applied statistics program provides the student with a solid foundation in mathematical and statistical principles, experience in the application of statistics, thorough knowledge of computers and statistical software, and the necessary skills to communicate the results of a statistical analysis. The demand for graduates with this type of preparation has been precipitated from the recognition by business, industry and government that a large number of problems can be effectively analyzed and solved through the intelligent use of statistical methodology. Graduates of the program collaborate with specialists in scientific and technical areas with mathematical and statistical analyses of problems.

Transfer **programs**
Transfer programs are arranged on an individual basis.

Requirements for the BS degree
The student must meet the minimum requirements of the Institute as described on page 171. In addition he or she must complete the requirements contained in one of the particular programs listed here, or its equivalent, as determined and approved by the Department of Mathematics. In conjunction with a faculty advisor, individual student programs will be established to meet particular needs, interests, and goals.

For more information on AS and BS degree requirements, contact the head of the Department of Mathematics.

Yr.	COMPUTATIONAL MATHEMATICS, TYPICAL COURSE SCHEDULE	Qtr. Credit Hour*		
		FALL	WTR.	SPG.
1	SMAM-210,211 Freshman Seminar	1.	1	
	SMAM-251,252,253 Calculus I, II, III	4	4	4
	SMAM-305 Calculus IV			4
	ICSP-241 Programming I-Algorithmic Structures	4		
	ICSP-242 Programming II - Data Structures		4	
	ICSP-305 Assembly Language Programming			4
	Science Electives	4	4	4
	•Liberal Arts (Core)	4	4	
	‡?1^81081 Education Electives	0	0	0
2	SMAM-306 Differential Equations I	4		
	SMAM-351 Probability	4		
	SMAM-352 Applied Statistics I		4	
	SMAM-265 Foundations of Discrete Mathematics		4	
	SMAM-399 Co-op Seminar		0	
	SMAM-431 Matrix Algebra			4
	ICSP-243 Programming III - Design and Implementation	4		
	ICSS-325 Data Organization and Management		4	
	ICSP-319 Scientific Applications Programming			4
	Institute-wide Elective			4
	'Liberal Arts (Core)	4	4	4
	‡Physical Education Electives	0	0	0
		FALL WTR.		SPG. SMR.
3	SMAM-432 Linear Algebra	4		
	SMAM-467 Theory of Graphs and Networks	4		
	SMAM-461 Mathematical Modeling			4
	ICSP-315 Digital Computer Organization	4		
	Mathematics Elective			4
	Computer Science Elective			4
	'Liberal Arts (Core)	4		4
4	SMAM-411 Real Variables I	4		
	SMAM-511,512 Numerical Analysis I, II	4		4
	Mathematics Electives			4
	Institute-wide Elective			
	'Liberal Arts (Concentration)	4		8
5	SMAM-531,532 Abstract Algebra I, II	4		4
	Mathematics Elective	4		
	Computer Science Elective			4
	'Liberal Arts (Electives)	8		4
	'Liberal Arts (Senior Seminar)			2

•seapage 118 for Liberal Arts requirements,
tSee page 176 for policy on Physical Education.

Yr.	APPLIED STATISTICS, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SMAM-210,211 Freshman Seminar	1	1	
	SMAM-251,252,253 Calculus I, II, III	**4**	4	4
	SMAM-305 Calculus IV			4
	ICSP-241 Programming I - Algorithmic Structures	4		
	ICSP-242 Programming II - Data Structures		4	
	ICSA-220 FORTRAN			**4**
	Science Electives	4	4	4
	"Liberal Arts (Core)	4	4	
	tPhysical Education Electives	**0**	**0**	**0**
2	SMAM-306 Differential Equations	4		
	SMAM-351 Probability	4		
	SMAM-265 Foundations of Discrete Mathematics		4	
	SMAM-399 Co-op Seminar		**0**	
	SMAM-352,353 Applied Statistics I, II		4	4
	SMAM-431 Matrix Algebra			4
	SMAM-458 Statistical Quality Control			4
	Institute-wide Elective		4	
	"Liberal Arts (Core)	8	A	4
	tPhysical Education Electives	**0**	**0**	**0**
		FALL WTR.		**SPG. SMR.**
3	SMAM-432 Linear Algebra	4		
	SMAM-354 Regression Analysis	4		
	SMAM-355 Design of Experiments			4
	Mathematics Elective			4
	Institute-wide Electives	4		4
	•Liberal Arts (Core/Concentration)	4		4
4	SMAM-454 Nonparametric Statistics	4		
	Mathematics Electives	4		**8**
	Institute-wide Elective			4
	'Liberal Arts (Concentration/Electives)	**8**		4
5	SMAM-451,452 Mathematical Statistics I, II	4		4
	SMAM-555 Statistics Seminar I	4		
	Mathematics Elective			4
	'Liberal Arts (Electives)	4		4
	"Liberal Arts (Senior Seminar)	2		

'See page 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Physics Program

Dr. Arthur Z. Kovacs, Head

The Department of Physics offers programs leading to the AS and BS degrees in physics.

The BS degree in physics is a five-year program with cooperative work experience. Graduates with this degree find employment opportunities with industrial, academic, and government agencies, or continue their education in MS or Ph.D. programs in physics or physics-related areas, such as biophysics, atmospheric science, imaging science, or industrial business administration.

Requirements for the BS degree in physics

The student must meet the minimum graduation requirements of the Institute as described on page 171 and in addition 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 advisor, individual student programs will 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 photo science is possible.

For information on AS and BS degree requirements, contact the head of the Department of Physics.

Yr.	PHYSICS, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SPSP-200 Physics Orientation	2		
	SPSP-311,312 University Physics I, II		4	4
	SPSP-371,372 University Physics Lab I, II		1	1
	SMAM-251,252,253 Calculus I, II, III	4	4	4
	SCHG-211,212 Chemical Principles I, II	3	3	
	SCHG-205,206 Chemical Principles I, II Lab	1	1	
	ICSA-205 Computer Techniques	3		
	'Liberal Arts (Core)	4	4	8
	tPhysical Education Electives	0	0	0
2	SPSP-313 University Physics III	4		
	SPSP-373 University Physics Laboratory III	1		
	SPSP-314 Introduction to Modern Physics		4	
	SPSP-315 Introduction to Semiconductor Physics			4
	SPSP-321 Introduction to Laboratory Techniques		4	
	SPSP-374 Modern Physics Laboratory			1
	SMAM-305 Calculus IV	4		
	SMAM-306,307 Differential Equations I, II		4	4
	Technical Elective	3		
	"Liberal Arts (Core)	4	4	4
	tPhysical Education Electives	0	0	0
3	SPSP-401,402 Intermediate Mechanics	4		4
	SPSP-415 Thermal Physics	4		
	SPSP-431 Electronic Measurements I			4
	SPSP-480 Theoretical Physics I			4
	"Liberal Arts (Concentration)	8		4
4	SPSP-411,412 Electricity and Magnetism	4		4
	SPSP-455 Optical Physics	4		
	SPSP-522 Introduction to Quantum Mechanics			4
	SPSP-421 Experimental Physics	3		
	Institute-wide Elective	4		
	'Liberal Arts (Elective)			4
	'Liberal Arts (Senior Seminar)			2
5	SPSP-501 Theoretical Physics II, or SPSP-432 Electronic Measurements II	4		
	SPSP-531 Solid State Physics	4		
	SPSP-550 Physics Seminar	1		
	Physics Elective (400-500 level)			4
	Institute-wide Electives	4		4
	'Liberal Arts (Electives)	4		4

'Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Clinical Science Programs

Dr. Joseph E. Devine, DABCC, Head
Kristen M. Waterstram-Rich, CNMT, Academic Coordinator

The Department of Clinical Sciences includes programs of study in biomedical computing, medical technology, and two medical imaging technologies: diagnostic medical sonography (ultrasound) and nuclear medicine technology. Each is designed to prepare students for entry into careers in the health sciences. Graduates find employment opportunities in hospitals and clinics, in industry, and with many governmental agencies. Some continue their education in graduate and professional schools.

Biomedical Computing Program

J. Richard Garnham, Program Director

RIT's biomedical computing BS degree curriculum is one of only a few similar programs in the United States. It was developed by the College of Science and the School of Computer Science because of the increasing use of computers in biomedical research and the health industry. Students receive training in the basic sciences, medical sciences and computer science with emphasis on clinical and laboratory applications. This array of courses provides graduates with the ability to communicate with medical personnel and trains them to use computers for the solution of clinical problems, laboratory analyses, medical information systems, and medical research.

Students are strongly encouraged to obtain experiential biomedical computing education by participation in the cooperative education program (co-op). The program spans five years to allow students to alternate quarters in school with quarters in paid employment during their last three years. Co-op allows students the opportunity to practice new skills in real-life situations and to test their chosen field before making a lifelong commitment. The experiences they acquire not only make their education more relevant, but also make them more valuable to prospective employers.

Students consult with faculty advisors in order to tailor their academic programs to individual career goals. Upper level electives are used to prepare graduates for specialized employment opportunities within biomedical computing, for graduate school in the sciences or computer science, or for post-graduate professional school.

Requirements for the BS in biomedical computing
The student must meet the minimum graduation requirements of the Institute as described on page 171 and in addition must complete the requirements contained in this program or its equivalent as determined and approved by the Department of Clinical Sciences. Transfer students may be required to take additional course work, depending on the program they attended at their previous school. Specific requirements will be determined for each transfer student by the department.

For information on AS and BS degree requirements, contact the head of the Department of Clinical Sciences.

Yr.	BIOMEDICAL COMPUTING, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	ICSA-200 Survey of Computer Science	4		
	ICSP-241 Programming I - Algorithmic Structures		4	
	ICSP-242 Programming II - Data Structures			4
	SCLB-201 Intro, to Biomedical Computing		1	
	SBIB-201,202,203 General Biology Lec	3	3	3
	SBIB-205,206,207 General Biology Lab	1	1	1
	SCHG-215,216,217 General & Analytical Chemistry Lec	4	3	3
	SCHG-225,226,227 General & Analytical Chemistry Lab	1	1	2
		4	4	4
	tPhysical Education Electives	0	0	0
2	ICSP-243 Programming III - Design & Implementation		4	
	ICSP-305 Assembly Language Programming	4		
	ICSA-220 FORTRAN			4
	SCLG-301 Medical Terminology	3		
	SBIB-305,306 Physiology & Anatomy		5	5
	SMAM-251,252 Calculus I, II	4	4	
		4	4	8
	tPhysical Education Electives	0	0	0
		FALL WTR.		SPG. SMR.
3	ICSS-315 Digital Computer Organization	4		
	ICSS-325 Data Organization & Management			4
	SMAM-309 Elementary Statistics			4
	SCLM-432 Biology Laboratory Techniques	4		
	SPSP-311,312 University Physics	4		4
	SPSP-375,376 University Physics Laboratory	1		1
	'Liberal Arts (Concentration)	4		4
4	SPSP-331 Electricity & Electronics			4
	Computer Science Electives	4		4
		3		3
	'Liberal Arts (Concentration/Elective)	4		4
		4		
5	Program Electives	8		8
		4		4
	'Liberal Arts (Senior Seminar)			2

'Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Medical Technology Program

James C. Aumer, C(ASCP), Program Director
Cary Gettings, Clinical Coordinator

The medical technology program prepares students for employment in hospital laboratories, industrial, medical or research laboratories and pharmaceutical companies. As medical technologists they will perform analyses which aid in the diagnosis and treatment of disease. They must be able to carry out complex test determinations, operate sophisticated instrumentation, and detect and correct errors. The program leads to a bachelor of science degree and meets all requirements of the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

Students enrolled in the medical technology program attend classes at RIT during the fall, winter and spring quarters for three years. During the third year, students take a concentration of clinically oriented courses which will prepare them for their hospital experience. In the fall quarter of their third year they apply to hospital schools of medical technology that are approved by the Committee on Allied Health Education and Accreditation (CAHEA). They will then spend their fourth academic year at the hospital that accepts them as an intern for clinical training in medical technology. While at the hospital, the student will receive additional course work as well as practical experience in each of the laboratory areas: hematology, microbiology, chemistry, and immunohematology.

The medical technology program is affiliated with Rochester General Hospital and St. Mary's Hospital in Rochester, with Millard Fillmore Hospital in Buffalo, and with the Boston Veteran's Administration Medical Center. Students may, however, seek admission to any approved hospital for their clinical experience.

Upon successful completion of the hospital experience, the bachelor of science degree is awarded. The student is then eligible to take a national registry examination for certification as a medical technologist.

Requirements for the BS degree in medical technology
The student must meet the minimum graduation requirements of the Institute as described on page 171 and in addition must complete the requirements contained in this program or its equivalent as determined and approved by the Department of Clinical Sciences. Transfer students will be required to complete a minimum of 45 quarter credit hours on campus and to complete all program requirements before beginning the clinical training experience. Specific requirements will be determined for each transfer student by the program director.

For information on AS and BS degree requirements, contact the head of the Department of Clinical Sciences.

Yr.	MEDICAL TECHNOLOGY, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SBIB-201,202,203 General Biology Lec	3	3	3
	SBIB-205,206,207 General Biology Lab	1	1	1
	SCHG-215,216,217 General & Analytical Chemistry Lec	3	3	3
	SCHG-225,226,227 General & Analytical Chemistry Lab	1	1	2
	SCLM-210 Medical Technology Seminar	1		
	SMAM-204 College Algebra & Trigonometry	4		
	SMAM-214,215 Intro. toCalculus I, II		3	3
	ICSA-205 Computer Techniques		3	
	"Liberal Arts (Core)	4	4	4
	‡ Physical Education Electives	0	0	0
2	SBIB-305,306 Physiology & Anatomy		5	5
	SCHO-231,232,233 Organic Chemistry Lec	3	3	3
	SCHO-235,236,237 Organic Chemistry Lab	1	1<	
	SPSP-211,212,331 College Physics & Electronics	3	3	4
	SPSP-271,272 College Physics Lab	1	1	
	SBIG-315 Medical Genetics_			2
	"Liberal Arts (Core)	8	4	4
	tPhysical Education Electives	0	0	0
3	SCLM-350 Spec. Topics in Med. Tech	1	1	1
	SCLM-401 Hematology/Immunohematology			4
	SBIB-404 Microbiology	5		
	SCHB-334 Biochemistry	4		
	SCLM-432,433 Biology Laboratory Techniques		4	4
	SMAM-309 Elementary Statistics		4	
	SBIB-402 Immunology	3		
	SCLM-405 Diag. Bacteriology and Mycology		4	
	"Liberal Arts (Concentration)	4	4	4
	Biology Elective			4

BS degree: the fourth year taken at an approved hospital for training medical technologists.

'Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

Medical Imaging Technologies

Nuclear Medicine Technology Program

Laurie H. Fuller, CNMT, Program Director
Cheryl Waldman, Clinical Coordinator

The program leading to the BS degree in nuclear medicine technology spans four years, the first three of which are spent on campus. The fourth year consists of clinical training at one or more approved hospitals.

Clinical training in nuclear medicine technology

Students who complete all required courses of the first three years of the program, with a minimum overall and principal field of study GPA of 2.0, are eligible to begin clinical training in July of their fourth year. The first four weeks of training are an intensive introduction to the theory and practice of nuclear medicine technology. Classes during this time are held on the RIT campus, and laboratory sessions take place at Rochester hospitals.

Most of the training is performed in nuclear medicine departments of the program's hospital affiliates. Each student is assigned (subject to the hospital's approval) a particular combination of three hospitals and trains approximately four months in each. The teaching is done primarily by physicians and technologists on the hospital staffs. Student progress and performance is monitored by the RIT nuclear medicine technology coordinator who makes periodic visits to the hospital departments. Readings, problem assignments and project work are an integral part of the student's clinical training. Periodically during each four-month rotation, students return to the RIT campus for lectures and discussions.

The hospital training emphasizes the following areas: (a) radiation safety and protection; (b) patient positioning and nursing procedures; (c) radionuclide imaging and external monitoring; (d) nuclear medicine department administrative procedures.

The training also includes a substantial component of training in radioassay theory and practice. One week of classroom and laboratory work at RIT during the winter of the training year is followed by four weeks of radioassay clinical training at one of the affiliated hospitals.

The RIT nuclear medicine technology program has affiliations with the following Upstate New York hospitals: Syracuse area—Community General Hospital; Rochester area—Strong Memorial Hospital, The Genesee Hospital, Highland Hospital, Rochester Genera] Hospital, Park-Ridge Hospital; Binghamton area—Our Lady of Lourdes Hospital, Wilson Memorial Hospital; Buffalo area—Sisters of Charity Hospital.

The RIT program is also affiliated with Veterans Administration Hospital, St. Louis, Missouri. Students who wish to intern at this hospital make application in the month of December preceding the start of the clinical year. Students selected for training there spend the entire year in St. Louis.

Requirements for the BS degree in nuclear medicine technology

The student must meet the minimum graduation requirements of the Institute as described on page 171 and in addition must complete the requirements contained in this program or its equivalent as determined and approved by the Department of Clinical Sciences. In conjunction with a faculty advisor, individual student programs will 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 photo science is possible.

For information on AS and BS degree requirements, contact the head of the Department of Clinical Sciences.

Accreditation

The nuclear medicine technology program is accredited through the American Medical Association sponsored Committee on Allied Health Education and Accreditation. Accreditation is granted only to those programs that meet certain established qualifications and educational standards. Programs are periodically evaluated to ensure that these high standards are maintained.

Yr.	NUCLEAR MEDICINE TECHNOLOGY, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SMAM-204 College Algebra & Trigonometry	4		
	SMAM-214,215 Intro, to Calculus I, II		3	3
	SCHG-215,216,217 General & Analytical Chemistry Lec	4	3	3
	SCHG-225,226,227 General & Analytical Chemistry Lab	1	1	2
	SBIB-201,202,203 General Biology Lec	3	3	3
	SBIB-205,206,207 General Biology Lab	1	1	1
	•Liberal Arts (Core)	4	4	4
	"Physical Education Electives	0	0	0
2	SCLG-205 Intro, to Diagnostic Medical Imaging	2		
	SPSP-211,212,213 College Physics Lec	3	3	3
	SPSP-271,272,273 College Physics Lab	1	1	1
	SCHG-202 Survey of Organic Chemistry Lec		3	
	SCHG-222 Survey of Organic Chemistry Lab		1	
	SCHG-203 Biochemistry I			4
	SBIB-305,306 Physiology & Anatomy		5	5
	ICSA-200 Survey of Computer Science	4		
	'Liberal Arts (Core)	8	4	4
	"Physical Education Electives	0	0	0
3	SCLG-301 Medical Terminology			3
	SPSP-351,352,353 Radiation Physics	5	5	5
	SBIB-430 Radiation Biology	4		
	SMAM-309 Elementary Statistics		4	
	"Liberal Arts (Concentration)	4	4	4
		3	4	4
4†	SCLN-401 Introduction to Clinical Nuclear Medicine	4		
	SCLN-402 Nuclear Medicine Procedures - Central	1		
	SCLN-502 N.M. Procedures - Skeletal System	1		
	SCLN-503 N.M. Procedures - Respiratory System	1		
	SCLN-510N.M. Procedures - Urinary System	1		
	SCLN-511 N.M. Procedures - Endocrine System		2	
	SCLN-512 N.M. Procedures - Cardiovascular System		2	
	SCLN-513 N.M. Procedures - Digestive System		2	
	SCLN-514 N.M. Procedures - Special Studies			1
	SCLN-515 N.M. Procedures - Hematological and In Vitro Studies			1
	SCLN-516 Instrumentation and Computers in Nuclear Medicine		2	
	SCLN-517 Radiochemistry and Radlopharmacology		2	
	SCLN-518 Radionuclide Therapy		1	
	SCLN-519 Radiation Health Safety			2
	SCLN-520 Radioassay			4
	SCLN-521 Review In Nuclear Medicine			2
	SCLN-522 Clinical Nuclear Medicine I	7		
	SCLN-523 Clinical Nuclear Medicine II		7	
	SCLN-524 Clinical Nuclear Medicine III			7

tClInlcal Internships-Affiliated Hospitals
'Seepage 118 for Liberal Arts requirements.
"See page 176 for policy on Physical Education.

Diagnostic Medical Sonography (Ultrasound) Program

Michael Foss, RDMS, Program Director
Lon E. Baily, RDMS, Clinical Coordinator

The diagnostic medical sonography (ultrasound) program offers two options—one leading to a BS degree and the other to a certificate.

The program consists of professional preparation of sonographers with specialty training in abdominal, obstetrical and gynecological ultrasonic procedures. Depending upon their background, professional experience and career goals, graduates may pursue staff, administrative, research, or teaching positions, or continue their education toward an advanced degree.

Requirements for the BS degree in ultrasound

The student must meet the minimum graduation requirements of the Institute as described on page 171, and, in addition, must complete the requirements contained in the curriculum listed here or its equivalent as determined and approved by the Department of Clinical Sciences. The program is a two- or four-year effort, including the one-year clinical internship. Associate degree graduates and registered or certified practitioners from a related health field can earn a BS degree by entering the last two years of the program. Additional course work may be required, depending on the program completed at a previous school.

For information on AS and BS degree requirements, contact the Program Director.

Requirements for the certificate option

The student must meet the Institute requirements as well as the specific requirements listed here. The certificate option is a one-year clinical internship that follows prerequisite course requirements. It is available to associate and baccalaureate degree graduates who are licensed or certified practitioners with two years of experience in a related health field, or the equivalent combination of education and experience.

Clinical training in ultrasound

The clinical internship for both the BS degree and certificate options will be conducted in a consortium of affiliated hospitals in the major medical centers of Rochester, Buffalo, Syracuse and Binghamton. An intensive introduction to ultrasound will be taught during the first month of the internship. Students will then be assigned to rotate through different hospital sites for their clinical training.

Both certificate and BS degree programs will allow graduates to take the national certifying exam for specialization in abdominal, obstetrical and gynecological ultrasound procedures.

Accreditation

The diagnostic medical sonography program is accredited by the Joint Review Committee on Education in Diagnostic Medical Sonography of the American Medical Association.

Yr.	DIAGNOSTIC MEDICAL SONOGRAPHY, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SBIB-201,202,203 General Biology Lec	3	3	3
	SBIB-205,206,207 General Biology Lab	1	1	1
	SMAM-204 College Algebra & Trigonometry	4		
	SMAM-214,215 Intro, to Calculus I, II		3	3
	Chemistry Electives	4 -	4	4
	"Liberal Arts (Core)	4	4	4
	Education Electives	0	0	0
2	SPSP-211,212,213 College Physics Lec	3	3	3
	SPSP-271,272,273 College Physics Lab	1	1	1
	ICSA-205 Computer Techniques	3		
	SCLG-301 Medical Terminology	3		
	SBIB-305,306 Physiology & Anatomy		5	5
	SMAM-309 Elementary Statistics			4
	"Liberal Arts (Core)	4	8	4
	Education Electives	0	0	0
3	SCLG-205 Intro, to Diagnostic Medical Imaging	2		
	SCLS-412 Ultrasonic Cross-Sectional Anatomy		4	
	SCLS-413 Ultrasound Instrumentation			4
	SCLG-415 Pathophysiology			4
	SBIG-315 Medical Genetics			2
	SPSP-361 Ultrasonic Physics	5		
	Program Electives	4	8	4
	"Liberal Arts (Concentration)	4	4	4
4	Clinical Internships-Affiliated Hospitals			
	SCLS-551 Intro, to Clinical Ultrasound	5		
	SCLS-552 Intro, to Obstetrical Ultrasound	5		
	SCLS-553 Intro, to Gynecologic Ultrasound	5		
	SCLS-554 Advanced Obstetrical Ultrasound		5	
	SCLS-555 Advanced Gynecological Ultrasound		5	
	SCLS-556,557 Intro, to Abdominal Ultrasound I, II		6	7
	SCLS-558 Advanced Abdominal Ultrasound			7
	SCLS-560,561 Seminar in Ultrasound		1	2

**Seepage 118 for Liberal Arts requirements.*
tSee page 176 for policy on Physical Education.

Yr.	DIAGNOSTIC MEDICAL SONOGRAPHY, CERTIFICATE, TYPICAL COURSE SCHEDULE	Qtr. Credit Hours		
		FALL	WTR.	SPG.
+	SCLG-205 Intro, to Diagnostic Medical Imaging	2		
	SCLS-412 Ultrasonic Cross-Sectional Anatomy		4	
	SCLS-413 Ultrasound Instrumentation			4
	SCLG-415 Pathophysiology			4
4	Clinical Internships-Affiliated Hospitals			
	SCLS-551 Intro, to Clinical Ultrasound	5		
	SCLS-552 Intro, to Obstetrical Ultrasound	5		
	SCLS-553 Intro, to Gynecologic Ultrasound	5		
	SCLS-554 Advanced Obstetrical Ultrasound		5	
	SCLS-555 Advanced Gynecological Ultrasound		5	
	SCLS-556,557 Intro, to Abdominal Ultrasound I, II		6	7
	SCLS-558 Advanced Abdominal Ultrasound			7
	SCLS-560,561 Seminar in Ultrasound		1	2

'Seepage 118 for Liberal Arts requirements.
tSee page 176 for policy on Physical Education.

National Technical Institute for the Deaf

William E. Castle, Director
James J. DeCaro, Dean

The National Technical Institute for the Deaf (NTID) was created to provide deaf students with the technological training that will lead to meaningful employment in business, industry, government, and education.

Public Law 89-36 authorized the establishment of NTID, and Rochester Institute of Technology was chosen as the sponsoring institution in late 1966 by the Department of Health, Education and Welfare. In the fall of 1968, a pilot group of 71 deaf students began their studies at NTID. For the 1988-89 academic year, enrollment will be approximately 1,250.

The partnership: NTID at RIT
As one college in nine at RIT, NTID is governed by the RIT Board of Trustees.

The fact that NTID is located on a college campus designed primarily for hearing students is important to the students' academic, personal, social, and communication development. The NTID academic programs, designed for deaf students, lead to certificates, diplomas, and associate degrees from RIT. Most NTID students take some courses along with hearing students in the other colleges of RIT. Some NTID-sponsored students are full-time or part-time students in the associate, bachelor's and master's degree programs of the other colleges of RIT. Special educational support departments made up of NTID staff members help them in their studies in those other colleges.

Facilities
A modern complex of buildings on RIT's Rochester campus was designed specifically to serve deaf students.

The Lyndon Baines Johnson Building is the main academic building. It has a theatre, laboratories, offices, speech and hearing areas, and classrooms.

Classrooms are designed to cut down on distractions. There are no windows, colors are soft, and seats are placed in a semicircle to allow the best possible vision from all parts of the room.

The theatre seats approximately 500 people and has closed circuit television. A number of productions are offered each year using both voice and sign language. There also are two well-equipped television studios, which are used to produce class and self-instruction videotapes and all captioning done at RIT.

The Hugh L. Carey Building, dedicated in 1983, contains classrooms and offices.

The residence halls in the complex contain dormitory rooms, recreation areas, student lounges, and study and conference areas. The residence halls that are shared by deaf and hearing students are Mark Ellingson Hall, Peter N. Peterson Hall, and Alexander Graham Bell Hall.

The Hettie L. Shumway Dining Commons consists of a large dining room and complete food service facilities.

Other special features for deaf students include a visual emergency system in the academic and residence halls and a sophisticated telecommunication system that links all parts of the RIT campus.

Educational philosophy
The educational goal of NTID is to provide opportunities for qualified deaf students to prepare for successful careers in business, computer science, engineering, applied science, allied health, photography, printing, art, media, or social services. Students may pursue training for semi-professional careers through the programs managed by NTID. NTID provides special support services that enable deaf students to pursue professional careers in any one of the other colleges of RIT. In addition to preparation in technological areas, NTID offers experiences that assist deaf students in developing needed personal, social, and communication competencies.

NTID also serves deaf persons throughout the world through educational outreach, publications, internships, and related services. NTID helps deaf adults add to their vocational and technical skills through continuing education.

NTID conducts research to better understand the role of deafness in education and employment, and to develop creative teaching techniques. There are training activities for its faculty and staff and for other professionals working with deaf persons across the country.

Cross registration
Qualified deaf students may enroll in associate, bachelor's or master's degree programs offered by other RIT colleges or take selected courses in those colleges. These students are called cross registered.

NTID students who are cross registered in courses in any RIT college have support services such as interpreters, tutors, notetakers, speech and hearing specialists, and counselors available to them.

To become a cross-registered student:

1. Deaf students may take selected courses in another RIT college.
2. Deaf students who have completed a program of study offered by NTID may continue their education in another RIT college.
3. Deaf students may enroll directly from high school or transfer directly from another college into an RIT program.

To enroll in another college at RIT, NTID students discuss the possibility with their counselor, academic advisor, and a member of the educational support department assigned to the college of their choice. The final decision as to whether the student is admitted is left to the college in which the student seeks enrollment.

Admission

To qualify for admission to RIT through NTID, students must meet certain standards agreed upon by RIT and the U.S. Department of Education.

1. Students should have attended a school or class for deaf students and/or have needed special help because of deafness.

2. Students must have a hearing loss that seriously limits their chances of" success in college without special support services. There is a general agreement that an average hearing loss of 60 decibels (ASA) or 70 decibels (ISO) or greater across the 500, 1,000, and 2,000 Hz range (unaided) in the better ear is a major handicap to education.

3. The NTID program at RIT is designed for students who have finished a secondary educational program. Students can be considered for admission before completing a secondary program if their secondary school authorities feel that they will gain more from the NTID program than by remaining in secondary schooj. Age and personal/social maturity are given special consideration in such a situation.

4. Students' educational backgrounds should show that they can probably succeed in a program of study at NTID or one of the other colleges of RIT. Students who are admitted should have an overall eighth grade achievement level or above. This means that the average score on an achievement test that includes reading, math, and language should be at an eighth grade level.

5. Students must show that they are personally and socially mature enough to enter a program at NTID or one of the other colleges of RIT. The information is provided through the student's personal references.

6. Students must be citizens or permanent residents of the United States.

Summer Vestibule Program

The Summer Vestibule Program is designed to prepare deaf students for further postsecondary training, to determine their academic strengths and weaknesses, and to provide an environment for developing program and career choices.

During the program, new students can explore and evaluate, through program sampling, the various programs of study available through NTID and the other colleges at RIT. Concur rently, faculty members evaluate students, offer counsel, and plan for Fall Quarter.

The counseling staff helps students to more fully understand their abilities, interests, and achievement levels through the interpretation and discussion of test data, background experiences, and personal and work values. Aptitudes and interests are then related to available academic programs and possible occupations. This gives students the opportunity to select a program and career that best suits their individual needs. The students also are guided through a series of specially designed living arrangements and self-governance experiences that help them adjust to college life and develop interpersonal relationship skills.

Charges and fees

The cost of attending the National Technical Institute for the Deaf includes tuition, room, board, and academic fees. For specific information on admission, costs and the programs, please consult the *Official Bulletin* for NTID, available from NTID.

Special support services

Special support services are provided to NTID-sponsored students at RIT. Interpreting services are available upon request for any class in which one or more deaf students are in attendance. In many classes for baccalaureate programs, trained hearing RIT students take notes on special notetaking pads and give copies of them to deaf students. Tutorial services are provided to deaf students as needed.

Notetaking allows deaf students to watch the interpreter or teacher while the notetaker records classroom information.

In addition, each NTID student has a personal career counselor who helps the student plan his or her educational program and adjust to college life. Mental health services and preventive mental health programming are provided for students. Services to assist in career development are an important part of the total NTID program. All special support services are geared toward helping deaf students gain the maximum benefit from their educational experiences at RIT—experiences that will lead to successful employment in the mainstream of the work environment.

Personal, social, and cultural growth

Experiences aimed at enriching and increasing students' educational opportunities in personal, social, cultural, and aesthetic areas of growth are provided throughout NTID and RIT. Both academic courses and cocurricular programs support these areas of student development. Formal certification for many of these learning experiences is available through RIT's Complementary Education program. Successful experiences in these areas help students become well-rounded individuals. Skills and attitudes are developed and practiced to help students become more successful professionals in their chosen careers, as well as more successful in their personal and community lives.

Educational experiences include Outdoor Experiential Education, Community Services, wellness programs, Leadership Development, intramurals, discussion sessions on issues of mental health and life adjustment, theatre, music and dance, student government and clubs, student newspaper, and student TV productions. Such activities are not only fun and educational, but also give deaf students opportunities to meet people from all areas of RIT and become creative and experienced leaders.

In addition to intramural athletics, NTID students may also become members of RIT varsity teams in intercollegiate competition. Deaf athletes have helped RIT to winning seasons in hockey, track, and swimming.

Employment opportunities

Historically, more than 95 percent of NTID-sponsored graduates who choose to enter the labor market have found jobs. Many graduates choose to continue their education through one of the other colleges of RIT or at other institutions.

The high employment rate is largely because these graduates hold technological skills that meet employers' needs. Also, NTID's highly individualized employment preparation program teaches students job search skills. Employment advisors help students develop strategies to find jobs and to maintain employment. They also help employers understand NTID and other programs at RIT, deafness, and graduates' technical and communication skills.

Employment advisors constantly monitor employment and economic trends in order to provide the most current information to students. They maintain liaisons with employers in order to provide feedback to technical departments regarding employers' needs in terms of skills. This helps NTID update its educational programs to make students marketable in business and industry nationwide.

Programs of study

NTID's educational programs prepare students for a variety of successful careers. These programs are designed to meet the increasing demand for technicians, semi-professionals, and specialists for employment in industry, business, government, and the professions. Programs are available at the certificate, diploma, and associate degree levels. NTID students can prepare for technological careers in seven major areas.

Business careers respond to industry's need for people skilled in operating office equipment, keeping financial records, performing clerical duties, and using computers.

Computer careers provide opportunities, through the data processing major, to work in computer operations and to prepare computer programs.

Students selecting engineering technologies careers may choose among three areas. Construction technologies careers involve helping to design and construct buildings, roads, and bridges. Industrial technologies careers involve working with manufacturing systems and special equipment used in industry. Electromechanical technology careers involve work with systems and special equipment used in industry throughout the country.

The AAS programs in Industrial Drafting Technology, Electromechanical Technology, Civil Technology and Architectural Technology are accredited by the Technology Accreditation Commission of the Accreditation Board of Engineering and Technology (ABET).

Students who have an interest in science and who like doing things to benefit people can combine both interests in Applied Science/Allied Health careers. Three program majors are offered: Medical Laboratory Technology, Medical Record Technology, and Optical Finishing Technology.

NTID Undergraduate Programs	Certificate	Diploma	AOS	AAS
Applied Accounting		•		•
Applied Art		•		•
Photo/Media Technologies		•		•
Architectural Drafting		•		
Architectural Technology				•
Business Occupations	•			
Business Technologies				•
Civil Technology				•
Data Processing	•	•		•
Educational Interpreting				•
Electromechanical Technology				•
Histologic Assistant	•			
Industrial Drafting		•		
Industrial Drafting Technology			•	•
Manufacturing Processes		•		
Medical Laboratory Technology				•
Medical Record Technology				•
Office Technologies		•		•
Ophthalmic Optical Finishing Technology			•	
Optical Finishing Technology	•	•		•
Applied Photography	•	•		•
Printing Production Technology	•	•		•

Visual Communication careers offer three program areas: Applied Art, Printing Production Technology, and Photo/Media Technologies. The NTID Applied Art Department sponsors an In-House Co-op—a cooperative work program on campus where students get experience with the real world of applied art.

All curricula at NTID include appropriate general education and communication courses. These encompass the common knowledge, skills, and attitudes needed to be effective as a person, a member of a family, an employee, a consumer, and a citizen.

NTID recognizes the need for good communication and has services covering all types of communication instruction. Related services are provided in reading, writing, use of residual hearing, speechreading, speaking, and manual/simultaneous communication.

Cooperative work experience

Cooperative work experience (co-op) is an important component of students' career development at RIT. Almost every program of study requires at least one co-op experience before graduation. Co-op jobs range from one quarter (10 weeks) to five quarters (50 weeks) of actual job experience, depending on the requirements of the specific program. Most co-op employment occurs during Summer Quarter.

Educational Interpreting Program

The purpose of the AAS degree in interpreting is to develop skills for the delivery of interpreting and other services needed by deaf persons in educational and other settings. While the emphasis is on developing interpreting skills, additional skills related to assisting deaf students in mainstream programs—notably, tutoring and notetaking—are also included. It is anticipated that graduates of the program will be able to get jobs in educational and community settings and other positions requiring a combination of skills. The degree may also serve as a starting point for more advanced educational degrees in other disciplines related to working with deaf persons.

All students must successfully complete the interpreting core courses (63 credit hours).

Transfer credits from another institution may be accepted, and in some instances students have the option of credit by exam for some of the professional courses if they already possess the skills required. Transfer and credit by exam options are determined on an individual basis.

Yr.	TWO-YEAR ASSOCIATE DEGREE IN INTERPRETING	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	0850-200 Sign Vocabulary Development	1		
	0850-203 American Sign Language I			3
	0850-210 Fingerspelling and Number Comprehension	3		
	0850-211 Voice Interpreting I		3	
	0850-251,252 Aspects and Issues of Deafness I, II	3		3
	0850-261,262 Theory and Practice of Interpreting I, II	3	3	
	0850-271 Professional Interpreter I			3
	0850-331 Expressive Transliteration		3	
	0850-391 Principles of Tutoring/Notetaking		3	
	0504-332 Liberal Arts: Literature	4		
	0502-220 English Composition		4	
	Contemporary Science	4		
	Liberal Arts: Social Science			8
	Physical Education Elective	0	0	0
2	0850-204 ASL Interpreting I			3
	0850-206 American Sign Language II		3	
	0850-212,213 Voice Interpreting II, III	3	3	
	0850-281,382 Interpreting Practicum I, II		5	5
	0850-283,384 Interpreting Seminar I, II		**1**	1
	0850-332 Expressive Transliteration II	3		
	0850-343 Expressive Oral Transliteration	3		
	0850-372 Professional Interpreter II	3		
	0850-392 T/N Practicum		3	
	0850-395 Mainstreaming: Programs and Alternatives		3	
	0850-396 Support Service Professional			3
	Liberal Arts: Science and Humanities	4		
	0850-520 College Vocabulary Skills			4
	Physical Education Elective	0		

Application Procedures and Admissions Services

Applying for admission

RIT accepts students on a "rolling admissions" basis. This means that decisions regarding acceptance are made within a few weeks after the application and supporting documents have been received in the Office of Admissions.

Because of this policy, and because some RIT programs fill to capacity very early in the year, it is to a student's advantage to apply early.

The admission decision

Factors considered in the admission decision include, but are not limited to, past high school and/or college performance—particularly in required academic subjects—admission test scores, competitiveness of high school or previous college, and post-educational experiences (military, etc.). An admission interview and recommendations from those familiar with your academic performance are often influential as well.

Students applying to RIT choose a specific program. Applicants are encouraged to indicate second and third program choices as well. For the undecided student, RIT offers a number of academic opportunities, including Technical and Liberal Studies, Undeclared Science and Undeclared Engineering.

Admission to RIT is competitive and based on our prediction of your likelihood of success. Standards vary from program to program. Each year approximately 7,000 students apply for freshman and transfer admission; about 5,500 gain admission; and 2,700 new freshmen and transfers enroll.

A $200 non-refundable admission deposit reserves a place in your class and is credited to your first quarter tuition. The due date will be indicated with your offer of admission. For students entering in September, this is May 1, or within two weeks of acceptance, whichever is later.

How to apply

In order to complete the application procedure for admission to RIT, you need to submit the following:

1. fully completed application for admission
2. non-refundable $35 application fee
3. an official high school transcript for all freshman applicants and all transfer applicants with fewer than 60 semester hours
4. official Scholastic Aptitude Test (SAT) or American College Test (ACT) results for all freshman applicants and all transfer applicants with fewer than 16 semester credit hours
5. official transcripts of all completed course work and a listing of any course work in progress (and not on the transcript) or course work to be completed prior to enrolling at RIT

Early admission

Students occasionally complete the prescribed number and adequate distribution of high school units in three years, with the exception of fourth-year English and/or history. In such instances they may seek admission to RIT under the Early Admission Program. If admitted, they must fulfill high school senior-year requirements and first-year RIT requirements concurrently. Upon completion of the first year of study at RIT, they graduate from high school.

A letter from the high-school guidance office agreeing to the above conditions must accompany the application for admission.

Transfer credit

Because approximately 40 percent of RIT students are transfers, we have a strong commitment to attracting and providing services for them. Students who have completed studies at another accredited college before coming to RIT will be awarded transfer credit for all prior course work that is judged to be applicable to their RIT program. Usually a grade of "C" or better is required for a course to transfer.

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) or college-level examination placement (CLEP), New York State proficiency examinations or RIT-prepared examinations.

Academic scholarships

RIT offers academic scholarships based on merit through the annual Outstanding Freshmen Scholarship (OFS) and Outstanding Transfer Scholarship (OTS) programs. Winners are chosen on the basis of their previous academic record, recommendations, extracurricular activities and score on a scholarship exam taken at RIT.

All freshman applicants accepted by January 1, 1989, will be considered for invitation to the OFS program. Transfers must be accepted and make special application to the OTS program by March 1, 1989. Please contact the Admissions office for more details on either program.

Visit to campus

Selecting the appropriate college is a difficult decision, but 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.

The admissions staff

RIT takes pride in the diversity of its student body—diversity that is actively promoted by the Office of Admissions' in its recruitment of women, veteran, commuter, minority, returning, part-time, handicapped and international students. In addition to daily counseling and recruiting responsibilities, each admissions counselor acts as an advisor and program coordinator for a different group on campus.

We also direct students to various Institute resources and support services that tan help with questions about the world of work or job placement. Such referral assistance gives students a better insight into the opportunities and challenges at RIT.

Whether a high school student or an experienced homemaker exploring a second career, we encourage students to seek our assistance while clarifying or reexamining personal career goals.

To obtain answers to questions about RIT programs and procedures, contact the Admissions office. Counselors are available to help students with questions and concerns. An appointment may be scheduled by writing RIT Admissions, One Lomb Memorial Drive, P.O. Box 9887, Rochester, N.Y. 14623 or calling (716) 475-6631, (Monday-Friday, 8:30 a.m.-4:30 p.m.).

RIT's Office of Part-time Enrollment Services (OPES) provides a centralized information and counseling service for students interested in enrolling in part-time undergraduate studies offered through the Institute's various schools and colleges. We encourage you to contact this office if you need assistance in selecting an academic program, exploring financial aid opportunities, registering for classes, or receiving information about any aspect of part-time study at RIT.

OPES staff members are available to assist you during day or evening office hours, 8:30 a.m. to 7:30 p.m., Monday through Thursday, and 8:30 a.m. to 4:30 p.m., Friday. We invite you to telephone (716) 475-2229 for enrollment information, or visit our offices located on the first floor of the George Eastman Memorial Building.

Students with a severe to profound hearing loss may be eligible for admission to RIT with the support of the National Technical Institute for the Deaf (NTID). NTID is described in detail on pages 154-157 of this bulletin. Deaf students may request additional information about NTID at RIT by writing to: RIT, Associate Director of Admissions (NTID), One Lomb Memorial Drive, P.O. Box 9887, Rochester, N.Y. 14623

Expenses and Financial Aid

Procedures and Costs

Matriculated Day College Students

Payment procedure
The quarterly pre-billing
Charges at RIT are computed on a quarterly basis. The Institute must receive the required payment for each quarter before registration will be allowed. Any preregistered student whose payment is not received by the due date will not be eligible to officially register until payment is received. Any non-preregistered student must attend Open Registration Day and make payment at that time. Payments sent by mail should be made by check, payable to Rochester Institute of Technology. Due dates for the 1988-89 school year are as follows:

Fall Qtr.	August 18, 1988
Winter Qtr.	November 16, 1988
Spring Qtr.	February 15, 1988
Summer Qtr.	May 10, 1988

The student should receive the quarterly pre-billing approximately two weeks prior to the quarterly due date. These due dates are rigid. If payment is not received by the date stated, the student must appear at the Registration Day for the quarter desired. A late payment fee will be charged to all student accounts that become past due. Upon receipt of the student's payment in full, the Bursar's Office will process the payment and clear the student for registration.

Students whose college costs are paid by the G.I. Benefit Plan or their employer are required to submit the properly authorized deferment form. Quarterly pre-bills will be mailed to the student's permanent address.

Financial standing
Tuition and fees paid to the Institute cover approximately 60-70 percent of the actual expense of a student's education. The rest of the cost is borne by the Institute through income on its endowment and from the gifts of alumni and other friends.

Students, former students and graduates are in good financial standing when their account is paid in full in the Bursar's Office. Any student whose account is not paid in full will not receive transcripts, diplomas or other forms of recognition or recommendation from the Institute.

THE INSTITUTE RESERVES THE RIGHT TO CHANGE ITS PRICES AND POLICIES GOVERNING THEM WITHOUT PRIOR NOTICE.

Other fees
In addition to the fees specified in the table, certain segments of students may incur other fees as follows:

New Student Room & Board Fee—$26 charged to new students living in the residence halls.

Orientation Fee—$40 one-time charge for new students.

Photo Facilities Fees—$61 per quarter charged to all full-time photo students; $31 per quarter charged to all part-time photo students.

Late Registration Fee—A late registration fee of $25 is charged to any student who fails to register (and make the necessary financial commitment) by the designated quarterly open registration day and time.

Student accident and sickness insurance plan
A charge of $112 is assessed Fall Quarter to all full-time RIT students who have no other medical insurance and have not signed the waiver option. Full-time, undergraduate NTID students are charged $135.

FEE SCHEDULE 1988 (MATRICULATED DAY COLLEGE STUDENTS)

Tiiition	Per Quarter	Per 4 Qtr. Yi
Full-Time Undergraduate (12-18 Credit Hrs.)	$3,025	$9,075
Part-Time Undergraduate (Less than 12 Credit Hrs.)	$215/Cr. Hr.	
Student Activities Fee (Mandatory Charge)		
Full-Time Undergraduate	25	75
Part-Time Undergraduate	9	27
Student Health Fee (Mandatory Charge)		
Full-Time Undergraduate	30	90
Residence Hall Room Charges		
Double Occupancy	734	2,202
Single Occupancy	843	2,529
Double Room as a Single	1,101	3,303
Board/Meal Plans		
20 Meals Per Week	646	1,938
Any 14 Meals Plus	646	1,938
Any 10 Meals Plus	588	1,764
(Commuter meal plans also are available)		

Additional budgeting information, books and supplies. These vary widely with the program followed and to some extent the electives chosen. Programs with minimal expenses (e.g., sciences, business) will average $250-400; in the arts and crafts, this may be in the neighborhood of $1,000-1,500; in photographic illustration or professional photography, a realistic allowance is $1,500 in addition to cameras (but in photographic sciences and photo finishing, expenses are minimal).

Typical expenses

We can tell you what tuition, room and board and fees will cost, but estimates of personal expenses are up to the individual student. When estimating what you'll spend for a year at college, remember to count travel expenses, clothes, meals not counted in your board plan, and spending money. A typical full-time resident student would have the following academic year expense:

Tuition	$9,075
Fees	165
Room	2,202
Board	1,938
Books	307
Personal & Transportation	805
Total	$14,492

As indicated in the preceding paragraphs, expenses will vary according to individual circumstances.

12-month payment plan

For the 1988-89 academic year, RIT will offer a 12-month payment plan. This combines the elements of a prepayment/deferred payment plan. For further information regarding this plan, contact the Bursar's Office at (716) 475-6059.

Policies to remember

- Matriculated Day College students are charged the day rate for **ALL** courses taken (CCE, Day/Evening Division, and courses taken while on co-op).
- Students on co-op will not be charged tuition for those quarters unless they are also enrolled in classes.
- Non-matriculated and matriculated Day College/Evening Division students are charged for the type of course taken (CCE rate for CCE and Day/Evening Division courses, Day rate for Day courses, Graduate rate for Graduate courses).
- Students taking courses during Summer Quarter should refer to the Summer Quarter Bulletin for Policies & Procedures.

Refund Policies

It is the student's responsibility, not the instructor's, to assure that all paperwork and refunds are properly processed.

The acceptable reasons for withdrawal with refund during the quarter are:

For a full refund

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 may elect to complete the course by making special arrangements with both his instructor and department, or to withdraw and receive a full tuition refund. If he withdraws, he will have to repeat the courses 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. If part-time students drop a course during the Official Drop Period (first 6 days of classes during the specific quarter), they may contact the Bursar's Office for a 100% refund for that course dropped. Courses dropped after the official Drop Period will not result in any tuition refund.

For a partial tuition refund

A student must officially withdraw or take leave of absence from the Institute in order to be eligible for a partial tuition refund.

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 reason at the request of the Institute during a quarter.
3. Transfer by employer, making class attendance impossible.
4. Withdrawal for academic or personal reasons at the request of the student, approved by the student's advisor or department representative, the Institute coordinator for academic advising, and the bursar.

These partial refunds will be made according to the following withdrawal schedule and percentage of tuition reduction:

During official add/drop period (first 6 days of classes)—100 percent

From the end of the official add/drop period through the end of the second week of classes—70% tuition reduction

During the third week of classes—60% tuition reduction

During the fourth week of classes—50% tuition reduction

Fifth and subsequent weeks—no tuition reduction

NOTE: NON-ATTENDANCE DOES tfOT CONSTITUTE AN OFFICIAL WITHDRAWAL.

- **Loans** are a lien on future earnings. The money you receive on loan is a formal financial obligation that must be repaid. You need to be aware of the interest charges, the method of payment after graduation and the effect that additional loans will have on your ability to meet all of your later financial obligations. Student loans are not repaid until after graduation or termination of study, and interest does not begin to accumulate until then. j\

Many students will utilize the Guaranteed Student Loan Program (GSL) in meeting their costs. RIT also awards National Direct Student Loans (NDSL) and Income Contingent Loans (ICL). These are federal programs administered by colleges to eligible students as part of financial aid packages.

Parents are also eligible to participate in several educational loan programs designed to enhance funds available for college expenses. Parent Loans for Undergraduate Students (PLUS) for up to $4,000 per year are available to supplement other aid programs in meeting educational costs. While this parent loan is not based on need, the amount borrowed in any year cannot exceed educational costs taking into account other financial aid received.

RIT also offers a Supplemental Education Loan Program (SELP) designed to provide loans to families beyond amounts they would receive through existing federally subsidized programs. In the RIT Supplemental Loan Program, payments on principal and accrued interest commence six months after withdrawal or graduation with borrowing limits of up to $5,000 per year for full-time study.

In addition, RIT participates in the Supplemental Higher Education Loan Financing Program (SHELF). This loan is primarily available to parents of RIT students attending at least half time. In certain cases, students or spouses may also borrow under this program. The maximum loan available is equal to total cost minus approved financial aid; the minimum loan is $1,500 per year. Applications are available from the Office of Student Financial Aid.

- **Employment** opportunities are also available to assist RIT students in meeting college expenses. Whether or not students seek financial aid, they may choose to defray some of their expenses through student employment while attending college.

As part of a financial aid award at RIT, students may be offered employment in the College Work-Study Program. Over 2,700 students were employed on campus in 1987. The Student Employment Office also helped a number of students secure part-time employment off-campus.

Full-time salaried employment through RIT's cooperative education program can also contribute to meeting college expenses. While co-op salaries vary depending upon academic program, a typical co-op student will earn approximately $7,000 per year during his or her junior and senior years at RIT. Additional information about co-op can be found on page 174.

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 their educational costs over a 12-month period with no interest or finance charges. Participating families would make their first payment by June 1 preceding the academic year in which it would be utilized. Fixed costs include: tuition, fees, residence hall charges and RIT meal plans. Dormitory residents will contract for the 20- or 15-meal plan. Rental charges incurred for RIT apartments or with private landlords cannot be financed through the plan. The Advance Tuition Deposit required of all new undergraduates and the Advance Housing Deposit, if applicable, will be credited against annual charges. Approved financial aid may be deducted from student charges to reduce the amount financed.

Additional information as well as applications for the RIT program may be obtained from the Bursar's Office. Monthly payment programs are also available through a number of commercial banks and agencies, and inquiries regarding these programs should be directed to the Financial Aid Office.

RIT also offers a **Tuition Stabilization Plan** which guarantees no tuition increase for the equivalent of four years of undergraduate study (12 academic quarters). Tuition remains at 1988-89 rates ($3025/quarter) and monthly payments can be set on a four-, six- or eight-year repayment schedule. The amount financed ($35,175) is actually less than four years of tuition at current rates ($9,075 x 4 = $36,300). The plan requires $35,175 to participate; and although not required, participants may elect to obtain financing through Chase Lincoln First Bank, N.A., as a home equity loan at approximately 10.45% interest. Interest payments are tax-deductible under the new tax code. For the 1988-89 year, this plan is available only to incoming freshmen. Applications are available from the Office of Student Financial Aid or the Bursar's office.

Requirements for State and Federal Aid Programs

New York State Tuition Assistance Program (TAP)
In order for a student to receive a Tuition Assistance Program grant, an individual must be admitted as a full-time matriculated student, meet New York State residency and income requirements, must pursue the program of study in which he or she is enrolled and must make satisfactory progress towards completion of his or her program of study. The two tables list (on page 166) the approved standards of satisfactory progress for the associate degree and baccalaureate degree respectively.

In addition to accruing degree credits and minimum grade point average as specified below, TAP recipients are required to:

Complete 6 credits per quarter to receive TAP payments 2-4

Complete 9 credits per quarter to receive TAP payments 5-7

Complete 12 credits per quarter to receive TAP payments 8-12

Completion of a course indicates meeting course requirements and receiving a letter grade of A, B, C, D, or F.

Waiver of academic progress standards for TAP
Students who have been denied Tuition Assistance Program 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. Accordingly, waivers are normally granted for the reasons listed below (Item II). Students failing to meet satisfactory progress standards will be given the opportunity to contact an institutional representative 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 (decision of the institutional representative is final):

A. Verifiable physical/mental illness of the student or member of the student's immediate family during the quarter in which academic standards were not met.
B. Death of a member of the student's family during the quarter in which standards were not met.
C. For financial reasons, the student assumed an employment burden sufficient to cause unsatisfactory progress. Normally, the student must demonstrate that his or her work schedule has subsequently been reduced to allow sufficient time, in the judgment of the institutional representative, for academic pursuits.
D. Change of academic/career goals: Students who fail to meet academic progress standards and subsequently change majors or students whose failure to meet progress standards was caused by changing major* may be considered for a waiver. The student's entire academic record will be considered with regards to probability for success in the new acadertiic major.
E. Divorce/separation within the student's immediate family creating a demonstrable financial/emotional disruption sufficient to affect progress.
F. Transfer students failing to meet state standards in their first term of attendance at RIT may apply for waiver consideration. Applications will be evaluated on an individual basis.
G. Students may submit waiver applications for circumstances which the student feels were extenuating. Applicants must explain why circumstances were extenuating and beyond their control.

**Normally this will be the student who has attained a satisfactory grade point average but has lost degree credit hours due to changing majors.*

Standards of satisfactory academic progress for the purpose of determining eligibility of Federal (Title IV) Financial Aid

Federal regulations require financial aid recipients to maintain minimum standards of satisfactory academic progress for 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 standards described below are effective for terms ending after July 1, 1987.

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 (9 academic quarters) for degree completion.

Grade point average is reviewed at the end of each full-time quarter or its equivalent. Minimum cumulative grade point average standards are as follows:

Completion of:
- First Quarter— Minimum Cumulative GPA = 1.0
- Second Quarter— Minimum Cumulative GPA = 1.2
- Third Quarter— Minimum Cumulative GPA =1.4
- Fourth Quarter— Minimum Cumulative GPA = 1.6
- Fifth Quarter- Minimum Cumulative GPA = 1.8
- Quarters 6-18— Minimum Cumulative GPA = 2.0

Credits earned toward the degree are evaluated every three academic quarters. Aid recipients are expected to complete 30 degree credits every three academic quarters as detailed below:

Completion of:
- 1st Academic Year (3 Academic Qtrs.)— 30 degree credits required
- 2nd Academic Year (6 Academic Qtrs.)— 60 degree credits required
- 3rd Academic Year (9 Academic Qtrs.)— 90 degree credits required
- 4th Academic Year (12 Academic Qtrs.)— 120 degree credits required
- 5th Academic Year (15 Academic Qtrs.)— 150 degree credits required
- 6th Academic Year (18 Academic Qtrs.)— 180 degree credits required

Additional Requirements

Transfer students

Cumulative grade point average requirements are the same as for non-transfer students [i.e., students must obtain a 2.0 GPA at the end of two academic years (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 allowed to accumulate remaining degree credits is reduced by one. 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.

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 six credit hours will be counted on a pro-rated basis toward the maximum time frame.

All students
Students should be aware that eligibility to receive certain forms of federal assistance may expire in less than the equivalent of six academic years.

For students first receiving the Pell Grant after July 1, 1987, there is a maximum of five academic years of eligibility. In addition to annual limits, both the Perkins (National Direct) Loan and Guaranteed Student Loan also have cumulative undergraduate limits of $9,000 (Perkins) and $17,250 (GSL).

These standards apply to federally sponsored assistance programs: GSL, Supplemental Loans for Students, Parent Loan for Undergraduate Students (PLUS), Pell Grant, Supplemental Educational Opportunity Grant (SEOG), Perkins Loans (NDSL), Income Contingent Loans, and College Work-Study. Requirements for the New York Tuition Assistance Program (TAP), other state scholarships, and Institute-sponsored programs may vary somewhat from these standards.

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.

Student responsibilities
Recipients of financial aid from the Institute are responsible for reporting any significant changes in their financial situation during the year to the director of Financial Aid, who will review and may revise the applicant's financial aid accordingly. Financial aid recipients are also expected to assist in financing their education.

You should begin the process of applying for aid during the month of January. In order to receive full consideration, it is recommended that your FAF be received at the College Scholarship Service by March 1, prior to the Fall Quarter of your entrance. Applications received after March 1 are considered as long as funds remain available. We suggest you file your FAF as soon after January 1 as possible.

Any student who intentionally defrauds or attempts to defraud the Institute of tuition, fees or other charges, or who gives false information in order to obtain financial aid, is subject to legal liability, prosecution and Institute disciplinary action.

Standard of Satisfactory Progress for the Purpose of Determining Eligibility for State Student Aid

Baccalaureate Degree - Quarter System

Before Being Certified for This Payment	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th
A Student Must Have Accrued At Least This Many Credits	0	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	1.40	1.50	1.60	1.65	1.70	1.75	1.80	1.85	1.90

'Only students in the HEOP program at RIT are eligible for more than 12 quarters of undergraduate awards.

Standard of Satisfactory Progress for the Purpose of Determining Eligibility for State Student Aid

Associate Degree - Quarter System

Before Being Certified for This Payment	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
A Student Must Have Accrued At Least This Many Credits	0	3	9	20	32	44	56	68	80
With at Least This Grade Point Average	0	.50	.75	1.00	1.20	1.30	1.40	1.60	1.80

Undergraduate Financial Aid at a Glance

Scholarship/Grant	Eligibility	Amounts	Where to apply
Regents College Scholarship (New York State)	New York State residents who plan to attend college full-time and qualify through an examination in the senior year of high school.	$250 per year	N.Y.S. Higher Education Services Corp., 99 Washington Ave., Albany, N.Y. 12255
Regents Award for Children of Deceased Police Officers or Firefighters	Residents of New York State who are children of certain deceased policemen or firefighters	$450 per year	N.Y.S. Higher Education Services Corp., 99 Washington Ave., Albany, N.Y. 12255
Tuition Assistance Program (New York State)	New York State residents who show ability to pursue full-time programs and meet state income requirements	$350 to $2,850 per year	N.Y.S. Higher Education Services Corp., 99 Washington Ave., Albany, N.Y. 12255
Regents Awards for Children of Deceased and Disabled Veterans (New York State)	New York State residents who are children of certain deceased and disabled veterans, and are enrolled full-time	$450 per year	N.Y.S. Higher Education Services Corp., 99 Washington Ave., Albany, N.Y., 12255
Pell Grant (Federal)	Undergraduate students who are pursuing their first bachelor's degree, in financial need, attending post secondary institutions on at least a half-time basis	$250 to $2,200 per year	File Financial Aid Form requesting submissio to Pell Grant or file separate Pell Grant application.
Supplemental Educational Opportunity Grants (Federal)*	Students of academic promise who are accepted for college study, are in exceptional financial need, and are pursuing their first bachelor's degree	$100 to $4,000 per year for full-time students	Through RIT by use of the Financial Aid Form. File FAF between Jan. 1 and Mar. 1 each year.*
War Orphans Educational Assistance (Federal)	Children of certain deceased or disabled veterans.	Up to $220 per month	Veterans Administration
ROTC	Students enrolling in ROTC and who are academically qualified	Tuition, fees, books, and monthly stipend	RIT Department of Military Science
Veterans Benefits	Veterans	Amounts per month vary upon full-time/part-time status and number of dependents	RIT Veteran Affairs Office
RIT Scholarships and Grants	Financial need and satisfactory academic progress	Amounts vary	File Financial Aid Form between Jan. 1 and Mar. 1 of each year.*
Higher Education Opportunity Program (HEOP)	Economically and academically disadvantaged residents of New York State	Amounts vary	Director of HEOP at RIT
Other State Grants	Eligibility varies	Amounts vary	Consult your state's education department
Loans			
Guaranteed Student Loan (GSL)	Must be at least a half-time matriculated student	Undergraduates - up to $2,625 for freshmen and sophomores and $4,000 for upperclassmen. Cumulative maximum of $17,250.	Through RIT by use of the Financial Aid Form
Supplemental Loans for Students (SLS)	All students except dependent under-graduates. Must be enrolled at least half-time and matriculated.	$4,000 per year maximum	Local Lenders (it is recommended that the student apply for Guaranteed Student Loan first.)
Parent Loan for Undergraduate Students (PLUS)	Parent with a dependent who is full-time student	$4,000 per year for each dependent who is a full-time student	Local Lenders
Perkins Loans (formerly) National Direct Student Loans (NDSL)	College students who meet financial need requirements established by Federal government	Upt to $4,500 for first two years of undergraduate study. Maximum of $9,000 for four and five years of undergrad. study	Through RIT by use of the Financial Aid Form. File FAF Jan. 1 and Mar. 1 each year.*
RIT Supplemental Education Loan Program (SELP)	Full-time, undergraduate, matriculated RIT students. Eligibility to borrow may be affected by receipt of funds from other aid programs. Credit evaluation is necessary. Parents may also apply.	Minimum of $1,000 per year up to a maximum of $5,000 per year	RIT Financial Aid Office
Supplemental Higher Education Loan Financing Program (SHELF)	Undergraduate and graduate students attending RIT at least half-time. Parents may also apply.	Minimum $1,500; maximum is the amount equal to total cost minus aid.	Financial Aid Office
Employment			
College Work-Study Program (Federal)	College students in full- and part-time degree programs who meet financial need requirements established by Federal government.	Varies, depending on hours and wage rate. Wages range from $3.75 to $4.35	Through RIT by use of the Financial Aid Form. File FAF between Jan. 1 and Mar. 1 each year.*
Other on-campus part-time work	Considerable variation in kinds of positions, hours, and wages	Same as for CWSP	Consult other RIT publications and RIT Student Employment Office.

"NOTE: For first priority consideration, the FAF must be received in Princeton, New Jersey, by March 1 each year. To assure timely receipt, it is recommended that the document be mailed by February 20 each year.

Academic Policies and Student Standards

Registration and Student Records

Office of the Registrar
The Office of the Registrar operates the systems in which courses are scheduled, students register and student academic records are maintained.

The scheduling process
The development of the quarterly course and exam schedule is coordinated by the Registrar's Office in conjunction with the academic departments. The goal is to produce schedules that provide:
(1) effective utilization of resources (e.g., classrooms, instructors, time)
(2) equitable accessibility to courses and
(3) ample opportunity for normal progress toward degrees.

In short, course and examination schedules are directed at fulfilling curricular requirements while accommodating student interests.

Registration
To be officially registered at RIT, a student must be academically eligible, properly scheduled for courses, and have made the required financial commitment. All students are encouraged to seek academic advising before selecting courses.

There are several opportunities to register each quarter and the earlier a student registers the better chance he or she has of obtaining the classes desired. **Early Registration** begins approximately 10 weeks before the quarter begins and lasts for several weeks. During this period, students may register via the **Telephone Registration System** or by mailing or bringing their course requests to the Office of the Registrar. Some restrictions apply. Students who fail to make their financial commitments by the "Tuition Due Date" risk being dropped from their courses prior to Open Registration. Consult the quarterly Schedule of Courses for specific dates and procedures.

Open registration
Open registration is a one- or two-day event just prior to the start of the quarter and is the last opportunity to finalize course schedules and/or make financial commitments before the academic term begins. Matriculated students who elect to register for their courses and/or elect to make financial commitment after this date will be assessed a $25 late fee.

Drop/Add period
Students may initiate changes to their course schedules by dropping and/or adding courses during the first six days of the quarter (Saturdays, Sundays, and holidays excluded). All changes must be approved by the academic unit offering the course and must be recorded with the Office of the Registrar.

Non-matriculated student registration
Many of the courses offered by RIT are available to students who have not been admitted into a particular academic program. While non-matriculated students are eligible to participate in any of the registration periods above, some courses may be reserved for matriculated students during the earlier registration periods. These students are strongly encouraged to seek the advice of the colleges offering the desired courses before registration is attempted. Non-matriculated students are not assessed a late fee, but are expected to be properly registered by the end of the Drop/Add period.

Auditing a course
Courses that are taken on an audit basis will not count towards a student's residency requirements; may not be used to repeat a previously taken course; and do not satisfy degree requirements. A grade of 'Z' will be assigned and the student need not take exams. Permission to audit a course must accompany the registration and any changes between credit and audit must be accomplished by the end of the Drop/Add period.

Course withdrawal
With the permission of the instructor, a student may withdraw from a course at any time from the end of the Drop/Add period until the end of the eighth week of the quarter. A grade of 'W' will be recorded on the official record. Tuition refund policies are described on page 160-161.

Student records
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 official educational records.

RIT policy ensures that only proper use is made of such records. Therefore, with the exception of copies made for internsil use (e.g., those provided to departments for advising functions), in most cases, no copy of a student's permanent record (transcript) or non-public information from student records will be released to anyone without the student's written consent. If an employer, for example, requests a transcript, he or she will have to obtain a written request from the student. For more detailed information concerning the act, see the *Facts* booklet.

At the time of registration, but not later than 14 days after the beginning of a term, students may request the Office of the Registrar, in writing, not to release directory information pertaining to them. "Directory information" includes the following: a student's name, date and place of birth, major field of study, participation records in official RIT activities and sports, weight and height if a member of an athletic team, dates of attendance at RIT, degrees and awards received.

Transcripts: A transcript of a student's official academic records is maintained in the Office of the Registrar. It contains a detailed statement of the scholastic record.

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All requests for transcripts must be in written form. Each transcript request should include full name or names used, social security number, and dates of attendance to assure proper identification of the record requested. There is a charge for each copy. Transcripts can usually be obtained by a student within 48 hours after the request is submitted. During exam week and the week following exams, it may take longer to prepare a complete transcript.

No partial transcript will be issued.

No transcript will be issued to a student who is indebted to the Institute.

Transcripts issued directly to students are stamped "This official transcript issued directly to the student."

Transcripts from colleges other than RIT that have been received in support of admission application and/or transfer credit evaluation, will not be re-issued by the RIT Office of the Registrar.

Grade reports: Grade reports are prepared after the completion of each quarter. For Fall and Winter quarters, day college undergraduate students will receive their grade reports through their department mail folders. Grade reports for other students and other academic terms will be mailed directly to the students' permanent address.

Change of name, address or social security number: It is the obligation of every student to notify the Office of the Registrar of any changes in name, address, or social security number. Failure to do so can cause serious delay in handling student records.

Student retention
Based on a summary of the most recent cohort survived statistics, RIT's student retention rate is 49 percent for students entering at the first-year level and graduating four to five years later (the period between entry and graduation depending upon a student's particular program of study).

Excluding part-time and non-degree students in the College of Continuing Education, 77.48 percent of first-year, full-time day students register for their second year; and 80.03 percent of third-year students continue through graduation (fourth or fifth year depending upon the program).

RIT is currently developing a comprehensive study of the progress of students, which would include factors to predict retention for all student populations such as those on cooperative education work blocks and the large number of part-time and non-degree students.

The statistics reported herein have been computed in a manner consistent with data reported to the State Education Department through the Institute's Office of Institutional Research.

Academic Standards and Regulations

RIT stresses programs that lead to a high level of technical and professional competence. Programs of study are offered leading to degrees at the associate, bachelor's, and master's levels. Certificate, diploma and associate degree programs are offered by the College of Continuing Education (see page 48) and the National Technical Institute for the Deaf (request separate catalog).

Graduate degree programs
Many programs leading to graduate degrees are fully described in the separate Graduate Bulletin, available from the Admissions office.

Grading system
Grades representing students' progress in each of the courses for which they are registered are given on a grade report form at the end of each quarter of attendance. The letter grades are as follows:

A	Excellent
B	Good
C	Satisfactory
D	Minimum passing
E	Conditional Failure
F	Failure
I	Incomplete
R	Registered
S	Satisfactory
W	Withdrawn
X	Credit by Examination
z	Audit

An incomplete or temporary grade of "I" is given when a professor observes that a student is unable to fulfill the requirements of a course. The professor is required to inform the student of an extended due date for completion of the course requirements, which is not to exceed two quarters. If the registrar does not receive a "change of grade" form from the professor by the end of the second quarter due date, the incomplete grade changes to a failing grade, and the student is charged full tuition.

A grade of "W" will be assigned in courses from which a student withdraws after the second week" of classes or if a student withdraws from all courses in a given quarter. A student can change from credit to audit or from audit to credit status for a course only during the first six days of classes.

An "X" grade indicates successful completion of an external or Institute examination, provided such examination covers or parallels the objectives and content of the indicated course. Credit must be assigned in advance of any credit received through registration for the indicated course.

For exact policy and procedural statements on the above see the Educational Policy and Procedures Manual available in the Student Affairs Office or on reserve in the Wallace Memorial Library.

Grade point average
Each course has credit hour value based upon the number of hours per week in class, laboratory or studio, and the amount of outside work expected of the student.

Each letter grade yields quality points per hour as follows:

A—4 quality points
B—3 quality points
C—2 quality points
D—1 quality point

E and F count as 0 in computing grade point average (GPA). R, W, Z, S, X and I grades are not used in computing GPA.

The grade point average is computed by the following formula:

$$Qp^{\wedge} \quad \frac{\text{Total quality points earned}}{\text{Total quality hours}}$$

Dean's list
By action of the college concerned, matriculated undergraduate students will be placed on the Dean's List if their program quarterly GPA is at least equal to a 3.40; they do not have any grades of "Incomplete," "F," "E," or "D" (including physical education, orientation classes and any other non-credit, but required, courses); they have registered for, and completed, at least 12 credit hours per quarter; they are not on probation due to a low cumulative GPA in their principal field of study.

Exception: Matriculated undergraduate students who are primarily part-time students may qualify for the Spring Quarter Dean's List if in the

preceding three quarters they have taken 18 hours of credit with a program yearly cumulative GPA of at least 3.40, or in the preceding three quarters plus summer quarter, summer evening or day session have completed 24 credit hours with at least a 3.40 program yearly cumulative GPA. In both cases this must be accomplished without grades of "Incomplete," "F," "E," or "D," and without being placed on probation due to a low cumulative GPA in the principal field of study.

Academic probation and suspension policy

Matriculated undergraduate full-time and part-time students will be placed on probation or suspended from the Institute according to the criteria enumerated herein. All actions are taken at the end of the quarter. However, a student may petition the dean of the college for reconsideration of probation or suspension should the removal of an incomplete grade (I) raise the appropriate grade point average above those stated below. Each matriculated student will generate three different grade point averages. The *Institute* average reflects all course work completed at RIT. The *Program* average reflects course work completed at RIT applicable to graduation in a student's current academic program. The current academic program refers to the Institute and college degree course requirements specified by the degree granting college and noted in the Institute catalog. The third average, in the *Principal Field of Study,* reflects course work completed in a student's specialized field of study.

1. Any student whose program Quarterly Grade Point Average falls below 2.0* or whose Cumulative 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 will be *placed on probation.*

' 2. Any student who has been placed on probation according to (1) above is *removedfrom probation* for achievement of both a 2.0 Program Quarterly Grade Point Average and a 2.0 Cumulative Grade Point Average in the Principal Field of study, based upon at least 20 credit hours attempted in the principal field at RIT.

3. Any student who is on probation according to (1) and who is not removed from probation in the two succeeding periods of study in which credit is earned, will be suspended from RIT for a period of not less than one quarter.

4. 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 Averge is 2.0 or above will be granted one quarter to be removed from probation or he or she will be suspended from RIT.

5. Any student whose Program Quarterly Grade Point Average falls below 1.0 will be suspended from RIT.

6. Any student who has been readmitted to his or her original program, after being suspended, and then goes on probation will be suspended from RIT.

7. A suspended student may not enroll in any academic course at the Institute while on suspension. When there is evidence that the student's scholastic problems are the result of inappropriate choice, or other extenuating circumstances, the suspension may be waived or the student may be admitted to another program or allowed to take courses on a non-matriculated basis if it is approved by the dean of the college in which the enrollment is requested.

In evaluating the request for waiver or suspension, the dean may seek the recommendation of the Counseling Center as to the appropriateness of the program for the career goals of the student under consideration.

8. A student may apply to the Office of Admissions for re-admission at the end of his suspension. His re-admission must be approved by the dean of the college he wishes to attend upon his return (this may be his original college or another).

Disciplinary probation

Students are expected to conduct themselves at all times in such a way as to reflect credit on themselves and the Institute. Any student guilty of flagrant violation of good conduct may be warned, placed on probation or, in serious cases, dismissed from the Institute.

A student dismissed from RIT may not enroll in any courses. Disciplinary suspensions are imposed and may be waived only by the assistant vice president for Student Affairs (Judicial Affairs).

• *"C" Average*

' ' The principal field of study is generally defined to be all courses within (he college offering the academic program. Exceptions to this definition exist for the computer engineering, microelectronic engineering, criminal justice, social work, food service management and general dietetics programs, which include only courses from specific disciplines in their principal field of study. The packaging science programs, and programs offered through the College of Continuing Education and NT1D do not have principal field of study statistics calculated.

Class attendance and other rules

Students are expected to fulfill the attendance requirements of their individual classes. Rules and regulations relating to conduct in residence halls and use of general campus facilities are issued directly by the appropriate offices of the Institute and published in the student handbook.

It is the responsibility of all students to attend their scheduled classes regularly and punctually in order to promote their progress and to maintain conditions conducive to effective learning.

Absences for whatever reason do not relieve students of responsibility for fulfilling normal requirements in any course. In particular it is the student's responsibility to make individual arrangements in advance of missing class due to personal obligations such as religious holidays, job interviews, athletic contests, etc., in order that they may meet their obligations without penalty for missing class.

Attendance at class meetings on Saturdays, or at times other than the regularly scheduled meetings, may be required. The Institute reserves the right to alter any of its courses at any time.

What You'll Need for Graduation

The following general requirements apply to students who are candidates for an undergraduate degree:

Certificates and diplomas

1. Satisfactorily meet the program requirements of the college.
2. Full payment or satisfactory adjustment of all financial obligations.

Associate and baccalaureate degrees

1. Successfully complete all required courses of the Institute and college including cooperative employment where applicable.
2. Full payment or satisfactory adjustment of all financial obligations.
3. A minimum of 45 quarter credit hours must be successfully completed in residence at the Institute in the college granting the degree (inclusive of service courses). If the student has successfully completed 45 credit hours in residence he or she may petition the dean to study 15 quarter credit hours in absentia in the finEil year of the degree; a minimum 30 of the 45 quarter hours are to be completed in residence.
4. A program grade point average of at least 2.0.

5. Minimum number of quarter credit hours as required by that college, but in no case shall this be less than 90 quarter credit hours for the associate degree and 180 quarter credit hours for the baccalaureate degree.

6. Physical education requirements as published in the Official Bulletin.

7. Demonstrate competence in writing skills as established in the Institute's writing policies.

Writing policy

RIT's writing policy is meant to insure that each graduate develops sufficient skill in the use of the English language to function as an educated member of society and to meet any special demands for written communications likely to be expected in his or her intended career.

Students must demonstrate that they have the writing skills needed for successful entry into their chosen careers. At least three academic quarters before the student's anticipated completion of baccalaureate degree requirements, the department faculty will determine whether the student has met departmental writing standards. A full description of these standards and certification procedures are available from each department. Students whose writing does not meet standards will have to take remedial measures recommended by the department.

Students must meet the departmental writing standards before they can graduate. The nature and standards of departmental writing requirements will be consistent with Institute policy and will be reviewed by the Institute Writing Committee.

For the master's degree

See separate Graduate Bulletin, available from the Admissions office.

Certification for degree

Upon completion of the stipulated requirements, a student's academic department certifies him or her for a degree. After graduation, a statement verifying that a degree has been awarded will be posted to the academic transcript. Diplomas will be mailed to the graduate's permanent home address approximately six-to-eight weeks following the end of the quarter in which he or she was certified.

Commencement

RIT confers degrees and other academic awards at the end of each quarter. Formal commencement ceremonies are held at the end of the Spring Quarter. Graduates who have received their degrees at the end of the Fall or Winter quarter are invited to attend the Spring Commencement ceremonies. Students who will be completing their requirements at the end of the Spring or Summer quarter are expected to attend Commencement.

Institute Standards For Student Conduct

RIT's educational mission

It is the mission of RIT "to prepare men and women for living and working in a democratic and technological society" by offering curricula that "meet the need for technological and other specialized knowledge and skills within the broader framework of humanistic values."[1] To achieve its mission, the Institute establishes guidelines that provide for the orderly conduct of its instructional and campus life activities. As an educational community, it strives for a campus environment that is free from coercive, exploitive behavior by its members. Moreover, it sets high standards that challenge students to develop values that will enhance their lives professionally and will enable them to contribute constructively to society.

Historically, RIT has aspired to the goal of teaching students for the "making of a living and the living of a life, not as two distinct processes, but as one."[2] This goal includes the emotional, physical, spiritual and social development of students. Because the Institute prepares its students for leadership in their careers and in community life, it has set standards of personal development and academic excellence that go well beyond the standards of the larger society. Moreover, the faculty and staff are expected to set examples for students in the pursuit of their personal and academic development. Although RIT acknowledges and respects the diversity of values and lifestyles of its faculty, staff and students, each member of the RIT community has the responsibility of observing the standards of campus life that are important to the pursuit of the Institute's mission.

'Rochester Institute of Technology, "1980 Master Plan " (March 1980).

'George W Hoke, Blazing New Traili *(Rochester, N. Y., Rochester Athenaeum and Mechanics Institute, 1937), p. V.*

Principles underlying Institute conduct policies

1. Students are expected to assume responsibility for their own conduct and also to have concern for the behavior of others. Such responsibility includes efforts to encourage positive behavior and to prevent or correct conduct by others that is detrimental.

2. The Institute places high priority on self-regulation by its members and intends that campus life will provide opportunities for students to exercise individual responsibility.

3. The Institute acknowledges the diversity of backgrounds, lifestyles and personal moral values of those who comprise the Institute community, and respects the right of individuals to hold values that differ from those expressed by the Institute. However, in their activities and duties as students, they are expected to observe Institute policies and standards.

4. Moreover, the Institute has legitimate concern for personal behavior beyond the impact the behavior has on the rights and freedoms of others. When an individual's pattern of behavior is self-destructive, interferes with the achievements of one's educational objectives, or adversely affects the quality of life on campus, the Institute may intervene to correct or prevent such behavior.

5. The Institute values and safeguards the personal privacy of its members. Rooms in campus housing will not be entered by Institute personnel without either the permission of the residents or the authorization of the vice president for Student Affairs unless a legal search warrant has been obtained. Exceptions are made in emergency situations such as imminent harm to individuals or serious damage to the Institute property and for reasons of health and safety. The Institute adheres to the provisions of the Buckley Amendment regarding the privacy of student records.

6. The conduct of students at events held off-campus which are sponsored by RIT organizations must adhere to the same standards and policies as events held on campus, and infractions are subject to Institute action.

7. For students living in campus housing, campus life standards have special significance. The residence hall environment is highly interpersonal, and the behavior of every individual in some way usually influences the quality of residence life for others. Therefore, standards and policies for residence life are stated explicitly and are communicated to students through residence halls publications.

Summary of conduct policies
In keeping with the prior principles listed, the following broad areas of conduct for students are enunciated. Although they are not all-inclusive, they indicate in general terms the standards of student concern that are important to the desired quality of campus life and to the educational mission of RIT. More explicit conduct policies are contained within the residence halls' "Terms of Occupancy" and other official Institute documents.

Human rights and dignity
The Institute expects all students to practice high regard for the human dignity of other people. It seeks to prevent all types of discrimination on the basis of race, sex, religion, age, handicap and national origin. Attempts are made to resolve conflicts between individuals and groups with differing backgrounds and views through discussion and clarification of values and attitudes. However, repeated disregard for the rights and dignity of others will result in disciplinary action in accordance with Institute policies and procedures.

Personal conduct
Through its policies, the Institute requires conduct that contributes positively to the personal welfare of students, enhances the quality of the campus living environment and respects the rights of others. Conduct that infringes upon the rights of others or endangers any individual will not be permitted. The sanctions associated with student misconduct are outlined in Institute policies, and actions are taken in accordance with the RIT Judicial Process. The following statements on sexual behavior, alcohol and drug use, appropriate study environments, safety, and student regard for property are a further expansion of the Institute's position on the personal conduct of students.

Sexual behavior and harassment
The Institute acknowledges that an individual student's sexual attitudes and values are a matter of personal choice. However, responsible sexual behaviors, no less than in other areas of human interaction, must take into account the dignity, privacy and rights of others. Sexual harassment is not tolerated. Moreover, no individual should be subjected to exploitive actions. Unacceptable behaviors and living arrangements are further defined within the "Terms of Occupancy" for the various Institute housing units.

Alcohol and drug use
Individual students will be held responsible for their behavior even though their judgment may be impaired because of the use of alcohol or other drugs. Registration procedures for all RIT events set forth the responsibilities and procedures to be followed by the sponsoring group at an activity where alcohol is served. No student should feel pressured to consume alcohol or other drugs.

Institute policies on drug and alcohol use conform to the laws of the State of New York. The Institute is not a haven from the law, and both New York State law and Institute policy will be enforced. Those students who evidence problems with alcohol or drugs will be offered, and, if necessary, required to avail themselves of counseling or other appropriate treatment. Even though individual students may be receiving such assistance, they will be held accountable for their behaviors through established Institute judicial procedures.

Study environment
Students need a campus environment that is conducive to studying. This is especially important in those facilities that are designated primarily for study. In the residence halls, each separate living unit must establish in writing the policies it will maintain to provide adequate study conditions according to the basic standards established by the Institute.

Religious holidays
In regard to attending classes during religious holidays, the Institute calendar cannot accommodate fairly the wide variety of religious holidays observed by RIT students. Institute policy states that it is the responsibility of students to attend scheduled classes. Faculty members are requested to make every effort to accommodate the religious convictions of students.

If a student wishes not to attend classes in observance of a religious holiday, it is the responsibility of that student to confer with his or her instructors in order to meet class attendance expectations.

Safety
Safety is of critical importance at all places on the campus, but it is particularly important in the residence halls because the carelessness of one individual can threaten the lives of hundreds of others. Willful violations of safety, such as causing false fire alarms, will result in immediate action according to judicial procedures. Safety inspections of individual rooms and group living areas will be conducted periodically by authorized Institute personnel.

Student regard for property
Students are expected to exercise appropriate care of Institute property and regard for the property of others. A student-developed property damage policy in the residence halls holds accountable those students responsible for damage.

Academic Services

Career and Academic Advising

Career and academic advising helps students plan and carry out a sound program of study at RIT. Because of its importance, several specialized sources for this planning are available.

Advising systems will vary within academic majors depending on the unique needs of each program. Advising is available to all students whether from an assigned advisor or a centralized office within the college. Whatever the system, students will be assisted in developing their curriculum plans, determining the requirements for graduation, and interpreting academic needs. It is the student's responsibility, however, to seek out advising and take an active role in the maintenance of academic records. When a specific advisor is assigned to a student, he or she is a specialist in his or her career field.

When students wish to re-examine their choice of academic major, or have questions about the appropriateness of a transfer to a new major, the Counseling Center is available for clarifying educational and vocational plans.

The Office for Cooperative Education and Placement is another resource of the Institute, particularly in fulfilling cooperative education requirements in a student's major field and securing initial employment at the end of his or her program at RIT.

The support services at RIT are directed to meet career and academic needs. For assistance in finding the appropriate office, call the coordinator of academic advising at 475-6682.

Cooperative Education and Placement

RIT's particular philosophy is called career education—and the Office for Cooperative Education and Placement supports the Institute's commitment to preparing students for "the making of a living and the living of a life." RIT made a commitment to career education as early as the 1880s and began the Cooperative Education Program in 1912.

Since 1912, RIT has developed one of the world's strongest co-op programs. It is the fourth oldest and fifth largest cooperative education program in the world today. Last year alone over 1,300 employing companies across the U.S. participated in the program, hiring students to gain career experiences as a part of their RIT curriculum. Those 1,300 employers join the Institute and the student in a three-way partnership that leads to career awareness and experience that can't be matched. Co-op gives the student and the employer an opportunity to look each other over; it gives the student an opportunity to try out personal and professional abilities in a different environment. Many students relocate in order to take advantage of the best co-op opportunities.

The Office for Cooperative Education and Placement provides counselors for each student from the beginning of the co-op program right through career entry upon graduation. The office takes pride in being ready to give students an edge over the competition when they graduate. Individual career counseling and job search seminars are provided to develop important skills, resource materials for career and job research, job listings from co-op and career employers, reference and credential service, and an excellent on-campus interview program. The Cooperative Education and Placement staff not only counsels but also spends considerable time developing opportunities with employers nationwide for students in co-op programs and for graduates. Help also is available to alumni with lifetime services at their request, and all of the services are available to students and alumni at no fee.

A center for information about the employment of RIT students, the office communicates with business, industry and government to keep an eye on the needs of students and employers. Information is synthesized and made available through many formats to students and their academic advisors as well as Institute planners. The linkages among the students, alumni and employers enhance RIT's ability to provide a quality education firmly rooted in the dedication to preparation for career success.

Wallace Memorial Library

Information comes in many forms other than printed pages bound between two covers. When a student wants to research a topic at RIT's Wallace Memorial Library he or she will not only find a variety of print and nonprint forms such as books, compact disks, microfilm, microfiche and magazines, in which to locate information but also a unique on-line computer catalog. Individual terminals allow for access of authors, title and subjects of over 200,000 records.

In addition the library offers computerized searching of information from commercial data bases specializing in a broad spectrum of subject areas, as well as an electronic reference service available by calling 610WMLREF on the VAX mail network. Inter-library Loan assists in providing access to virtually all publicly available material.

To help in the use of all these resources, reference librarians are on duty during the week and on weekends. Located throughout the three floors are more than 700 study stations including individual carrels and group study rooms.

During the year student work in art and photography is exhibited in display gallery areas. Outstanding student work is also permanently displayed within the building as a result of Purchase Prizes awarded annually. Several lounge areas are located throughout the facility.

The library contains a special collection of materials on the deaf to serve the National Technical Institute for the Deaf and to support research in deafness.

A special Collections area houses the archives, rare books, faculty writings and RIT theses. A separate Chemistry Library in the Chester R. Carlson Memorial Building houses selected science material.

For library hours, call 475-2046; for Reference Desk, call 475-2564 and TDD, 475-2563; for Circulation Desk, call 475-2562.

Information Systems and Computing

Information Systems and Computing (ISC) provides computing services on VAX/VMS and VAX/ULTRIX (UNIX) systems and various microcomputers to students regardless of their majors. These services are provided at no cost to students. Many RIT colleges also have computing facilities available to students in their programs.

Students use computers for course assignments, developing computer literacy, writing reports, analyzing statistics, manipulating numbers and data using electronic spreadsheet software, producing graphs, and performing many other functions. Students also can send electronic messages to professors and other students at RIT, and throughout the world via the BITNET network.

A VAX/VMS computer account is available to each registered student whether or not specific computer use is required in the student's program. The account remains active as long as the student is registered and in good standing. ISC publishes the *Computer Use Code of Conduct* which provides guidelines on the use of computers at RIT.

Computer accounts and the files stored in those accounts are the property of RIT. ISC and departments that student accounts are associated with have the right to review and delete accounts and files. Normally, accounts are deleted only if the student leaves RIT. ISC will take action against people who abuse the privilege of using RIT's computers.

The Ross Microcomputer Lab and the VAX/VMS systems are used to support the Institute computer literacy program, which is available to many students. The Booth Microcomputer Lab with Apple Macintoshes, and Image Writer and LaserWriter printers, is available to students in the College of Liberal Arts Freshman Writing Program and the College of Fine and Applied Arts foundation courses. Other students may use the Booth Lab if it is not scheduled for those programs.

Central computer systems can be accessed via telephone or terminals in the User Computing Centers (UCC) located in the James E. Gleason Memorial Building (9), Max Lowenthal Memorial Building (12), Microelectronics/Computer Engineering Building (17), Lewis P. Ross Memorial Building (10), and Grace Watson Hall (25).

UCC and Microcomputer Lab employees assist students using the computer systems. Professional software specialists in the Academic Computing and User Services department also are available for consultation or presentation of free seminars. Documentation is available in the UCCs and labs, and can be purchased from ISC User Services or Campus Connections' Textbook department. The monthly *ISC Newsletter*, and on-line HELP, INFO and NEWS also provide information on using ISC systems.

Questions and comments regarding ISC services and policies can be made to Academic Computing and User Services staff in the Lewis P. Ross Memorial Building (10), room A291, or by calling (716) 475-6929. VAX/VMS computer accounts can be obtained from that office. Questions regarding use of computing facilities provided by RIT colleges should be made to the specific college.

Instructional Media Services

Instructional Media Services provides a complete range of television and audiovisual services to faculty, students and staff. The department consists of a television production and distribution service, a media production area, audiovisual distributing services, and three media learning areas: The Media Resource Center, the Language Laboratory, and the Media Center at 50 West Main Street. The IMS offices are in the lower level of the Wallace Memorial Library.

IMS Television Service has two production studios and portable video recording equipment for instructional use. The TV service also provides videocassette players and monitors for classroom use. IMS maintains a campus-wide, closed-circuit cable system that includes satellite reception and distribution of special programming. Off-air videotaping, dubbing and obtaining rights for use are handled here.

The IMS media production area provides instructors and students with in-house production of instructional media. The staff produces materials such as copy slides, slide duplicates, photographic prints, artwork for presentation and posters, audio recording and duplicate audio tapes. Flyers, announcements, award certificates and newsletters are produced using Macintosh publishing.

The AV Distribution Service provides the RIT community with instructional materials available from sources throughout the country. Research assistance is provided to locate and recommend the best materials to rent or buy. Projectors and projectionist services are available, as well as the loan of a variety of audiovisual equipment, such as slide projectors and tape recorders. Films, video, slides and equipment are delivered to the classroom and an operator is provided when requested.

The Media Resource Center, located just inside the main library entrance, contains a variety of nonprint media and AV equipment for individual use. The center contains a collection of more than 75,000 slides, as well as viewing facilities for videocassettes, videodiscs and any one of the 700 motion picture prints housed here. The Media Center at 50 W. Main Street also houses a minicomputer center.

The Language Laboratory in the George Eastman Memorial Building, Room 2338, provides audiocassette players for listening and recording. Audiotapes in a variety of foreign languages are available. This area is used as a laboratory by foreign language classes and English for speakers of other languages (ESOL). When not in use by classes, the laboratory is open for individual use.

The staff of Instructional Media Services encourages faculty and student requests for assistance in finding, producing and using media and provides consulting on all learning technologies. IMS offices are open from 7:30 a.m. until 9:30 p.m., Monday through Thursday; 7:30 a.m. to 5 p.m. on Friday and on Saturday mornings.

Learning Development Center

The Learning Development Center, an academic support unit of the Division of Academic Affairs, offers RIT students, faculty and staff, and the community a variety of services including diagnosis, individual and group instruction, and professional consulting.

Through center programs, RIT students have opportunities to improve their study techniques, critical thinking abilities, mathematical skills, reading and writing competence, and general facility in the uses of the English language.

There is a specialized English program for speakers of other languages (ESOL). In addition to providing individual and group instruction, the center maintains a math lab and a writing lab. Special programs, built around student requests, are provided for student groups and clubs. For the student who is experiencing academic difficulty, the center provides an individual learning assessment to discover factors that may facilitate or interfere with the student's academic performance.

Consultation, testing and instructional services are free to till RIT students with the exception of some ESOL instruction.

In addition to the programs listed above, the center offers three full-time programs of study: a College Anticipation Program, a specialized program of instruction for high school graduates desiring additional preparation prior to full matriculation at a college/ university; a College Restoration Program, an instructional program, with matriculated status, for students who have been suspended or are liable to suspension from college for academic reasons; and ESOL (English for Speakers of Other Languages), a program for students who do not meet the RIT admissions requirements on the TOFEL (Test of English as a Foreign Language) or who want to improve their English skills.

For more information concerning these LDC programs, contact the center at (716) 475-6682.

Learning Assessment Program

The Learning Assessment Program includes a team of diagnosticians who offer individual learning assessments to RIT students. The assessment process (which ranges from one to six, one-hour sessions) combines clinical interviewing and testing to discover cognitive and affective factors that may facilitate or interfere with academic performance.

Cognitive factors examined may include learning style, level of skill development, learning strategies as well as content knowledge.

Some factors that may relate to academic performance include appropriate choice of major, and students' perception of themselves as learners as well as their perception of the quality of their environmental, social and personal lives at RIT.

Results of an assessment enable a diagnostician and a student to discover how these factors affect the student's performance, and the diagnostician can then direct the student to appropriate services at the Institute. Students are often referred to this program by advisors or instructors, but need not be referred to take advantage of the services.

Students may contact the Learning Assessment Program through the Learning Development Center.

College Anticipation Program

The College Anticipation Program is designed for the college-bound high school graduate who desires further skill development before matriculating in a full college program.

Applicants are interviewed and diagnostic and achievement tests are administered. Once the educational diagnosis has been analyzed, and it has been determined that the College Anticipation Program is appropriate for the student, an individualized program is designed.

The program runs for one RIT academic quarter and generally includes a content course, LDC instruction and academic counseling. The work is based on a system of established deadlines and immediate evaluation of progress.

Participation in the program cannot guarantee that a student will be admitted to the college or university of his or her choice, however, professional resumes of student achievement in the program are sent to colleges upon request of the student.

During the summer the center runs a special five-week College Anticipation Program for high school graduates entering college the next fall. Students in the summer program take a credit course from the RIT College of Liberal Arts and a block of LDC reading, writing, math and study skills courses. The LDC instructors incorporate the Liberal Arts course reading, writing and study assignments in their "learning-how-to-learn" courses.

College Restoration Program

The College Restoration Program is a specialized program of instruction, with matriculated status, for students who have experienced academic difficulty and suspension from a college.

A course of action can be recommended only after the reason for academic difficulty has been established. If it is determined that CRP can be helpful after an interview and diagnostic and achievement tests have been made, a very structured program including one or two content courses, LDC instruction, and counseling is arranged.

The student meets regularly with an LDC faculty mentor to clarify directions and goals, to discuss relationships between the skills courses and to review progress.

The entire program is designed to strengthen the student's self-confidence. Successful completion of this program could qualify students for readmission to the college or department of their choice or for entrance into another educational program.

Although the College Restoration Program does not guarantee a participant readmission to his or her former college or status as a transfer student at another school, the center does provide recommendations and resumes of student achievement in the program to colleges upon request of the student.

English to Speakers of Other Languages

The English Language Center at the Learning Development Center offers both full-time and part-time study of ESOL. Classes included in each level are conversation, grammar, writing, vocabulary and reading.

Full-time program

The intensive English language program consists of 25 hours of instruction per week. Fifteen hours are spent in classes and 10 hours in language lab work. This intensive study program meets the immigration requirements for the Certificate of Eligibility 1-20.

Before a specific course of study can be selected students must be tested to determine their level of English proficiency and to diagnose their specific language needs.

Part-time and individualized instruction
In addition to the full-time program, students may register for one or more ESOL courses. Arrangements also may be made to receive individualized language instruction. Pronunciation, conversation, as well as grammar, writing, reading and vocabulary may be studied in this manner. There is a fee for instruction, but matriculated students receive a reduced rate.

For more information about ESOL program offerings come to the Learning Development Center or call 475-6684.

Foreign Language instruction
The English Language Center offers a program in which international students teach their native language. The international student meets with a trained language instructor who assists in curriculum development and provides language teaching methodology. The international student then instructs in his or her native tongue. The language, the culture and customs can all be part of this program. For more, information about learning a new language or teaching your native language call the English Language Center at 475-6684 or come to the office (GEM-2321) for an application.

Counseling Center

The Counseling Center, located in Grace Watson Hall, offers a variety of services to RIT students. These services include:

- Personal/Psychological Counseling
- Alcohol Counseling and Referral Services
- Career Counseling
- Career Exploration Seminar
- Career Decision Program
- Career Resource Center
- SIGI
- Testing
- Developmental Programs and Groups
- Victims Assistance Program
- Consultation
- Referral Services

Counseling Center hours
Counseling Center hours are 8 a.m. to 5 p.m. Monday, Tuesday, and Thursday; 8 a.m. to 8 p.m. Wednesday; and 8:30 a.m. to 4:30 p.m. on Friday. For more information about services or to arrange for an appointment, please call 475-2261.

Personal/psychological counseling
Individual and group counseling are available for those who could benefit from meeting with a counselor to explore, for example, more effective ways of dealing with conflict and stress, managing feelings and emotions, developing satisfying relationships, communicating with others, or coping with a personal crisis.

Alcohol counseling and referral services
Individual and group counseling is available for persons having concerns about their (or other's) use or abuse of alcohol. Informational resources and educational programs on alcohol use and abuse also are offered.

Career counseling
Career counseling is also available at the Counseling Center. Counselors can assist students in making thorough appraisals of their interests, abilities and personality traits so that they can use this information in developing educational and vocational plans. Tests of aptitude, interest and personality may be used in this assessment process.

Career exploration seminar
For students who would like assistance with choosing or re-examining a chosen field of study, the Counseling Center also offers a three-credit Career Exploration course that provides an opportunity to increase their awareness of themselves, career options and the process of career decision making.

Career decision program
The Career Decision Program has been designed to provide RIT students with the opportunity for an in-depth structured career guidance experience as they choose or change a specific program of study. The program provides enrollment to selected students for up to three quarters and includes the following elements: i

1. Intensive career/academic advisement during a period of exploration and choice;
2. Opportunity to sample preferred course work across as many as three majors before narrowing to a single field of concentration;
3. Continuation of financial aid for students receiving assistance (the program carries the benefits of full matriculation for students carrying a minimum of 12 credit hours);
4. Participation in the three-credit Career Exploration course referred to under "Career Exploration Seminar."

Since enrollment is limited and sufficient time is required for a thorough assessment of a student's situation, it is advisable to apply as early in the quarter as possible for the coming quarter. Interviews can be arranged by calling the Counseling Center, at 475-2261.

Career resource center
Located in the reception area of the Counseling Center is a Career Resource Center which contains occupational information on a variety of careers, vocational and educational reference books and college catalogs on microfiche.

SIGI
SIGI (pronounced Siggy) stands for System of Interactive Guidance and Information. It is a computer-based guidance system designed to help people make informed and appropriate career decisions. Sigi is often used as part of the career counseling process.

Testing
The Counseling Center administers a number of psychological tests and interest inventories as part of the counseling process for some individuals. In addition, the Counseling Center administers a number of national tests. Advance credit exams (CLEP) are also given.

Developmental programs/groups
The Counseling Center staff offers groups each quarter to assist students in their development. These groups offer a supportive environment in which to explore a variety of issues which typically affect the lives of students—such as forming relationships, handling loss, managing stress, clarifying values and choosing careers.

Additionally, Counseling Center staff members are prepared to present to student groups and organizations such programs as communication skills, team building, leadership development and goal setting. Individuals are asked to contact the Counseling Center at least three weeks before programs are desired.

Victims Assistance Program (VAP)
VAP, jointly administered by the Counseling Center and the Department of Campus Safety, provides assistance to members of the RIT community who are victims of sexual assault (e.g., rape, attempted rape, sexual abuse, physical or verbal harassment, etc.). It is a confidential service staffed by specially trained volunteer counselors drawn from RIT's faculty and staff.

Consultation
Staff members of the Counseling Center will provide consultation services to interested student groups and organisations in a number of areas within the scope of their expertise.

Special Services

Extra Help: HEOP

RIT's Higher Education Opportunity Program (HEOP) makes it possible for disadvantaged students to attend college. Students in the program not only have financial difficulty, but also have not excelled in high school. They have good academic potential, but may not have received encouragement from guidance counselors, may have attended academically poor schools, have had the care of younger brothers or sisters or time-consuming jobs.

HEOP's responsibility is to help such students reach and maintain academic competence. Many students in the program are deficient in essential math and verbal skills, but HEOP provides remedial instruction and tutoring and personal, academic and career counseling. The HEOP staff also make acceptance and financial aid decisions and help insure that students learn about and make use of the numerous services and opportunities available to all at RIT.

Every student admitted into HEOP must be both academically and financially disadvantaged. All are provided with full financial support, which is provided jointly by RIT and state and federal money. A supplemental grant is also available for any student who needs extra time (up to one year) to complete his or her program of study.

All students admitted to the program as freshmen must enter a five-week prefreshmen program conducted during the first summer. They take math and remedial reading as necessary, and everyone is required to take Introduction to Psychology. The instructor tries to incorporate different facets of a college education—such as a research paper, a personal opinion paper and different types of tests—into the course. Students learn to use the library, organize a paper and read a textbook effectively.

In the 13 years of its existence HEOP has graduated nearly 200 students, many of whom have landed excellent jobs. Graduates in technical fields have the highest success rate.

Office of Special Services

Pursuing a college education is a major challenge. The goal of the Office of Special Services is to provide the necessary academic and personal support that will enable students who qualify to fully realize their potential and to successfully complete their college career.

The Office of Special Services is a federally funded program that has been hosted at RIT for 12 years. Presently, there are four components that make up the office. Each has a distinct purpose while remaining integrally linked with the others.

The Academic component has developed a full complement of services including tutoring, math mentoring, advisement and skills development, which assist students with academic concerns, enable them to understand and refine their learning process, and to use academic resources more effectively. The academic staff help students develop success strategies and experience positive responses to academic endeavors.

The Counseling component works to bring students into the program and provides the appropriate personal support that enables them to direct their energies into positive pursuits. Understanding that each student brings a unique set of circumstances to the learning environment, a counselor assists the student in understanding all that is available to him or her and how to access the assistance each may need. A counselor also is available to 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. When used effectively, this component can provide the student with new opportunities for personal and professional growth.

The Disabled Student component deals with a broad range of issues faced by students with disabilities. The staff provides services related to academic and physical accessibility, and works to raise the awareness of the RIT community.

The ultimate purpose of the Office of Special Services is to help students meet their unique challenges and become a part of the larger community. We work to make systems work. We often serve as a bridge between the learning community that we create and RIT. The success we pursue is the development of the student as a whole person, able to negotiate the environment using his or her resources.

For further information, contact the office at (716) 475-2832 or 2833. The office is located in the RITreat in the College-Alumni Union. Eligibility for the program is determined by financial aid, physical or learning disability and first generation college status. Any full-time, undergraduate student who is a United States citizen and meets one of the eligibility requirements may become a member of Special Services.

International Student Affairs

The Office of International Student Affairs is the resource center for all international students on visas and for those members of the campus community seeking cross-cultural learning. The office provides assistance with immigration regulations and travel documents, issues International Student ID and American Youth Hostel cards, helps international students adjust to the academic and cultural expectations in the U.S. and provides cross-cultural programming for international students and the campus at large. The staff works closely with RITISA, the inter national student organization and International House, which is a special interest house in the residence halls for both international and American undergraduates and serves as a liaison with off-campus groups which seek to extend friendship to international students. The office is located on the second floor of the George Eastman Memorial Building. The phone numbers are 475-6943 and 475-6876.

International student emergency loan fund
This fund is administered by the International Student Affairs office and its purpose is to provide emergency assistance to international students on visas. The loans may not exceed $200 and must be repaid within two months. Students must have a good record of payment with the Bursar's office and no unpaid previous loans from the fund to be eligible for a loan. This loan and the International Student Scholarship fund are supervised by the International Student Scholarship Committee. Further information regarding loans or scholarships can be obtained from the International Student Affairs office.

Veterans' Affairs

Active service persons, reservists, members of the National Guard, veterans and their dependents begin their educational programs in RIT's Office of Veterans' Affairs (OVA). We know that the transition from the military to a successful civilian career is dependent upon proper preparation, and education is the key to this transition process.

"Our veterans realize the value of education and they undoubtedly try harder," says Gene Clafk, director of Veterans' Affairs. "They have proven that a student's level of maturity and interest in self-development are key factors in achieving his or her goals." Veterans attending college usually have the added responsibility of a family, the added financial pressures of maintaining a home and often work at a full-time job. Because of these demands, veterans attending college need several types of assistance. "Our veterans are dependent on our ability to service their needs," says Clark. "They come to the OVA for counseling, information, assistance with problems, tuition deferments, or just to say hello. Our OVA staff members are veterans too, so veterans helping veterans is an important aspect of our services."

The OVA staff is comprised of a director, program secretary, peer counselors, and VA work-study students, who are available to handle inquiries and assist veterans with VA-related and college-related information. The OVA is conveniently located on the lower level of the College-Alumni Union and is easily accessible for both day and evening students. The office is open from 8 a.m. to 8 p.m., Monday through Thursday, and until 4:30 p.m. on Friday. Students may visit the office or telephone (716) 475-6642 to speak with an OVA counselor.

Veterans are important to the RIT community. They bring unique experiences and expertise to the campus. Consequently, the Office of Veterans' Affairs is very interested in helping veterans become successful students at RIT. Veterans who are planning on attending college should consider the difference that a campus Veterans' Affairs Office can make. Students coming from schools unable to assist a veteran population's needs find RIT a model place to begin and continue their education.

"Benefit programs are often seen as complex, confusing and problem related, but successful contact with our veterans has proven that VA problems can be effectively dealt with before they have a negative impact," maintains Clark. "We are concerned that many veterans, as well as the dependents of deceased and disabled veterans, are not utilizing their benefits. Benefit payment rates have recently increased and the length of eligibility extended to 10 years for program completion. We encourage veterans and their family members to contact us if we can provide assistance as they explore the many educational opportunities available to them at RIT."

Complementary Education

Viewed as a valuable dimension of the student's education at RIT, Complementary Education formally recognizes and encourages important experiences that happen outside the classroom that complete and enhance the traditional academic activities of the Institute. Its essential aim is to further the personal development of students. It will supplement their curricula in four broad content areas: personal and social development, learning skills development, civic competence, and leisure and avocational skills.

Complementary Education is multifaceted. The Complementary Education Grants Program makes funds available to students, faculty and staff who want to develop unique kinds of experiences. These projects are not credit bearing, but formal recognition that describes what was learned is offered.

Some specific programs that make up the total Complementary Education concept include the Community Services Program, which provides students with opportunities to volunteer in large, cooperative off-campus community projects as well as individually to foster civic awareness; and non-profit agencies in Rochester; the Group Development Program, which offers student groups an opportunity to look at their self-awareness, communication skills and group dynamics; the Outdoor Education Program, which offers an intriguing way to learn decision making and group interaction skills using the outdoors as a classroom; and the Leadership Program, which emphasizes an in-depth look at individual leadership style. Participants have an opportunity to examine their own skills, receive feedback, and discuss the theories of leadership. Each of these activities offers formal learning before the event takes place and evaluation and sharing of the experience. Students will have the chance to expand their learning environment. These programs also serve to increase the interaction of hearing and deaf students.

• Complementary Education also sponsors the Institute Forum, a year-long series of nationally known speakers who focus each year on a different topic related to the quality of life and our society.

Campus Life

What happens in the classroom is one part of a college education. But what happens outside the classroom can be just as important.

The Division of Student Affairs at RIT coordinates many services provided to students during their years at college.

The division includes Physical Education, Intercollegiate Athletics, Residence Life, Student Health Service, Student Activities, International Student Affairs, College-Alumni Union, Religious Activities and the Chaplaincy, Counseling Center, Higher Education Opportunity Program (HEOP), Orientation and Special Programs, Upward Bound, Special Services, Judicial Affairs and Horton Child Care Center.

Life on campus is a living, as well as a learning, experience. Students, with the counseling of trained resident staff, have their own governing organizations and develop social programs. A wide variety of athletic, social and professional activities is available for all students.

Student Housing

The residence halls

The Department of Residence Life provides a living environment for approximately 3,500 students in residence halls. Part of the Division of Student Affairs, the department has as its primary goal the development of a residential setting consistent with the overall educational philosophy of the Institute.

RIT recognizes the significant effect the on-campus living environment has on the social, academic, educational and overall development of the student. The aim of the Residence Life Department is to create a positive environment to promote this development.

All first-year students are required to live in the residence halls, except those who live with their families within a 30 mile radius of RIT. All sophomore students are required to live in either RIT residence halls or apartments. Resident students enrolled in cooperative programs are charged only for the period of occupancy. Each student is required to sign a Room and Board Request and Assignment Form, which is included in the housing information mailing. All students are required to live in residence halls for the full academic year (fall, winter, spring).

RIT realizes that the student body is not homogeneous and that students have diverse interests, backgrounds, experiences, needs and maturity. In recognition of this, a variety of living options is available. Many residence areas are coeducational; men and women live on the same floor. Many Greek organizations (fraternities and sororities) have their own houses. There are also academic houses in art, computer science, engineering and photography; International House for both international and American students; Unity House, which emphasizes the development of black culture; and Community Service Clubhouse where members volunteer their time to groups on and off campus.

Most residence hall units have double rooms only, although some units do include a limited number of single rooms. These single rooms are not available to entering students. During Fall Quarter most entering students may be assigned to triple rooms (a double room which has three students living in it). We immediately start de-tripling (making these double rooms again) as quickly as possible.

All corridors and rooms are carpeted. Bed, desks, chair, dressers, closets and window covering are provided depending on the number of students in a room. Each corridor in the unit has its own bathroom, equipped with showers. Suites are available, composed of three bedrooms connected to a common bathroom only in the Ellingson/Peterson/Bell area. Each house has its own lounge furnished with a TV. Coin-operated laundry facilities are available in the tunnels.

Each student is furnished with information on residence hall living by the Department of Residence Life.

All residence hall students must participate in one of the Institute board plans. The charges for residence and meals are included in the section on student expenses.

Apartment housing

Apartment housing is available to all upper-class students in Institute-managed apartments and townhouses. While single students comprise the majority of apartment residents, a mixture of graduate and undergraduate students, single and married students and faculty/staff can be found in each apartment complex. Contracts run September through August, but residents are permitted to leave for co-op employment and summer without penalty. All apartments are equipped with refrigerator and stove but are otherwise unfurnished. Furniture, however, may be leased from local rental companies. All Institute apartments are located less than a mile and a half from the center of campus and are serviced by RIT's shuttle bus system. A brochure describing the four complexes—Colony Manor, Perkins Green, Riverknoll and Racquet Club—is available from the Office of Apartment Life, One Lomb Memorial Drive, P.O. Box 9887, Rochester, N.Y., 14623; (716) 475-6920.

The Housing Connection

A service of the Department of Apartment Life, The Housing Connection is designed to meet the general housing needs of the RIT community. The center provides free referrals for students looking for Institute or off-campus housing accommodations in the Monroe County area. In addition, the center offers the only on-campus clearinghouse for apartment residents in need of additional roommates, providing a continual updated listing of available roommates and their specific interests.

Located on the first floor of Kate Gleason Hall (room 1060), The Housing Connection provides free maps, information pamphlets, and telephones for users of this service. A trained staff member will assist you in your research for housing or roommates. For more information, stop in or call 475-2575.

New Student Orientation

Each year, RIT provides freshman and transfer students with summer and fall orientation programs designed to help them make the adjustment to life in a new environment. These programs are developed for both students and parents and address the academic, social, emotional and intellectual issues involved in beginning college or changing from one college to another.

Three Summer Orientation programs are offered, one specifically for transfers in June, and two for freshmen in mid-July. Summer programs concentrate on registration for classes, academic information, support services provided by the Institute, and Deaf Awareness. The fall program continues the academic information process and concentrates on promoting student interaction and community development. While the summer programs are not required, students are strongly urged to attend both the summer and fall programs to derive the greatest benefit.

During the fall Orientation, new students receive a copy of *The Source,* the official new student handbook of RIT. This important publication contains valuable information on Institute services and programs.

All students are encouraged to live in the RIT residence halls during the summer programs. This live-in experience is designed to allow all students to sample on-campus living regardless of their long-range housing plans.

Parents' orientation is offered only during the summer programs. There is a $10 parent orientation fee to support the program.

All new, full-time, day, matriculated students are assessed a $40 program fee to cover program development costs.

The Office of Orientation and Special Programs is located on the A-level of the College-Alumni Union, and is open 8:30-4:30, Monday through Friday. The phone number for Orientation is (716) 475-2508.

Student Clubs and Organizations

Student Directorate
The Student Directorate is the governing body for students. It represents the student population by working with RIT administration, faculty and staff to communicate the needs and desires of the student body and to communicate the decisions of the administration to the students. It pulls together the student body to formulate and express student opinion and the Student Hearing Board, which provides for the self-discipline of the student body.

All full-time and part-time undergraduate and graduate students are members of the Student Directorate when they pay the Student Activities Fee. All other students may become members of the Student Directorate if they wish to participate in student-sponsored activities by paying the Student Activities Fee.

Off Campus Student Association
OCSA is the representative student government for all RIT students who do not reside in a dormitory. The Off Campus Student Council, formed in 1978, is composed of off-campus students who live with their parents, the four RIT-operated apartment complexes or off RIT campus apartments. Through the council, a standing Housing Committee has been set up to deal with the varied housing problems that RIT students may face. The council is the voice of the off-campus students to the administration.

OCSA also has many student committees that work on programming for the off-campus student and provide needed services such as lockers, a computerized ride pool system and off-campus survival booklets. The OCSA lounge, located in the RITreat, College-Alumni Union, is a place for the off-campus student to relax. OCSA also publishes a newsletter that contains beneficial off-campus news.

If you are interested in getting involved, stop in at the OCSA office or call 475-6680 for more information.

The College Activities Board
The College Activities Board, which is composed of students, staff advisors, and a student activities staff representative, is responsible for providing a balanced program of activities that reflect and enhance the special social, cultural, recreational and educational needs of the campus community.

The Black Awareness Coordinating Committee
The Black Awareness Coordinating Committee is organized to foster an awareness of the role of black men and women in the total society and to create a greater understanding among the black students at RIT. Each year the committee sponsors various social and cultural programs designed to achieve these objectives.

Student professional associations
A number of national technical associations have student affiliate chapters on campus. Frequently sponsored by parent chapters in Rochester, these societies play an important part in Institute life by bringing together students who have common interests in special subjects. The associations serve a professional and social purpose.

Student publications
RIT students produce some of the most professional collegiate publications in the country.

The *Reporter* is published by students weekly, except during examinations and holidays, and serves as the student news magazine. *Techmila,* the student yearbook, contains a student-edited pictorial and written description of student life at the Institute during the year. The *Reporter* and *Techmila* have consistently won state and national awards.

An activities calendar is issued monthly.

These publications draw their talented staffs—artists, photographers, writers, managers and printers—from the entire student body.

College-Alumni Union

The College-Alumni Union, a primary focal point at the main entrance to the academic plaza, is designed specifically to service events sponsored by and for the entire campus community—students, faculty, and administrative groups, alumni and guests. A staff is available to assist and advise the various individuals and groups in planning and coordinating their activities. In addition, a complete information service is located in the main foyer.

The three-level facility, the center of cocurricular activities, features the 515-seat Ingle Auditorium; a complete gameroom for bowling, billiards, foosball, and electronic games; a unisex hairstyling salon & tanning booth; a candy and tobacco counter; three separate dining areas comprised of the main cafeteria, the Ritskeller, and the Clark Dining Room; meeting rooms and lounges. The offices housed also include Special Services, Student Affairs, Orientation, Complementary Education, the Black Awareness Coordinating Committee, the Office of Minority Student Affairs, Food Services, Veterans' Affairs, College Activities Board, Student Activities, Student Directorate, WITR radio station, RITV, *Techmila, Reporter,* Off-Campus Student Association, and other student organization offices.

The RITreat

The RITreat is more than just a lounge. Through the efforts of the Student Life Advisory Board and several other student groups and individuals, the RITreat is a dedicated student area. The following resources can be found in the RITreat:

- Clubs and organizations
- Copiers/typewriters/word processors
- Shuttle bus and RTS monitors
- Special Services
- Student Activities office
- Student conference room
- Student Directorate office
- Study tables/lounge area
- TDDs
- TV lounge

Social events

Major social events ori the activities calendar include Fall'Weekend, Spring Weekend, Homecoming, Parents Weekend, and Winter Weekend.

Other dances, parties, speakers and events are sponsored by other organizations such as the College Activities Board, the Residence Hall Association, the Greek Council, and various special interest clubs. Students can also get involved with departmental and professional associations such as Alpha Chi Sigma, Delta Lambda Epsilon, Delta Sigma Pi and Sigma Pi Sigma. Greek Council consists of members of two national sororities and nine national fraternities which offer social activities and promote high scholastic and social standards among members.

Performing arts

The Department of Performing Arts at NTID supports a variety of activities.

- The NTID Theatre presents three plays during the year. These plays use deaf and hearing actors working together and are performed in both sign language and voice for the enjoyment of all audiences.
- The NTID Lab Theatre offers experimental, new or unusual productions. In addition, new directors and student writers use the space for developing their skills.
- The RIT Dance Company includes deaf and hearing dancers in at least one concert each year. They rehearse throughout the year; the company's emphasis is on modern dance.
- Sunshine Too is a company of six performers who travel throughout the country from October to June. They present shows for schools, alumni groups, special RIT groups and the general public. They provide information on RIT and deafness during their performances and workshops.
- RIT Tiger Band combines RIT and NTID students, faculty and staff and community members who perform a variety of music at various sporting events, awards and ceremonies, dedications and student activities.
- RIT Tiger Band Auxiliary Squads' members are recruited from the total RIT student body to perform flag, rifle and drum line routines with the RIT Tiger Band.
- RIT Time Stompers perform music of the 1890s- 1940s, Dixieland jazz and danceband styles. The group performs at various events including receptions, dinner parties and ceremonies.
- RIT Trombone Choir and RIT Flute Choir ensembles perform at various events such as receptions, dinner parties and ceremonies.
- The Sign/Sing Chorus includes students, faculty and staff, who present a holiday show and a winter/spring event. Songs are sung by a chorus of 25-30 members and signed by another group of 10-15. people. Rehearsals are once a week.
- The NTID Music Combo is composed of NTID music students who perform contemporary music for RIT and community events.
- Guest artists are invited to perform in the NTID Theatre. A dance company, a professional mime and the National Theatre of the Deaf are typical presentations each year.

Religious Activities

Although RIT has no formal religious affiliation, it has recognized the importance of religion in educating the whole person by establishing Campus Ministries as a department within the Division of Student Affairs. Campus Ministries welcomes and encourages all religious denominations to join together to serve the needs of individual faiths as well as all the members of the RIT community with their religious, ethical and personal concerns. All religious activities at RIT are interpreted for the deaf and hearing impaired.

RIT's Interfaith Center, on the east side of the College-Alumni Union, is the focal point for the diverse religious traditions within the Institute community.

The center's two levels offer areas for worship, reflection, lectures, and meetings. Administered by Campus Ministries, the center also houses offices for the department's director and for each campus minister. The offices are open from 8:30 a.m. to 10 p.m., Monday through Thursday, and Friday from 8:30 a.m. to 6 p.m., to accommodate evening activities. Saturday and Sunday hours for the center are determined by scheduled activities. Campus ministers may be contacted at 475-2135 (V/TTY) or by coming to the center during regular hours.

Various religious traditions have assigned campus ministers to the Institute to serve the needs of students, faculty and staff of their particular faiths. Campus ministers offer opportunities for worship, personal counseling, religious study, social services and dialogue to the entire Institute community. The ministers are available at the Interfaith Center to discuss options for campus activities and to assist in developing programs. There are also student organizations recognized as religious clubs by the RIT Student Directorate. Although not directly affiliated with the Department of Campus Ministries, these religious clubs .adhere to the same Institute guidelines for religious activities.

Physical Education

Rochester Institute of Technology recognizes the need for physical fitness and recreation in today's society. To meet this demand, the Institute offers an exceptional program of courses designed to aid the student in developing and maintaining fitness, acquiring physical skills in a variety of lifetime activities and providing principles and elements for utilizing free time in an enjoyable and constructive manner.

The PE requirement is built on the premise that the attainment of good health and fitness are basic elements in the pursuit of excellence in many aspects of campus life. The learning experiences provided through the physical education curriculum are an integral part of the total educational experiences at RIT.

Institute's PE Policy

Baccalaureate Degree—All day-school candidates for the baccalaureate degree entering as first or second year students must successfully complete six quarters, or the equivalent of two years, of physical education. This requirement is normally met during the first and second years at RIT, but may be completed at any time during succeeding academic quarters.

Those entering as third **Or** fourth year students must successfully complete three quarters of physical education unless they have completed the equivalent of three quarters or more of physical education or earned a baccalaureate degree at another Institution.

Associate Degree—All candidates for the associate degree are required to successfully complete three quarters, or the equivalent of one year, of physical education. This is normally met during the first year at RIT, but may be completed at any time during succeeding academic quarters.

Transfer Credit—One semester of credit at another school equals one quarter of RIT credit; two semesters equals three quarters. Credit for independent activity may be granted if completed within one year before matriculation at RIT and approved by the Physical Education Department. Students who have met requirements may enroll in Physical Education on an elective basis.

Exceptions

Permanent Medical Excuse—This will be granted only by the RIT Student Health Service. One copy of the medical excuse should be filed with the Physical Education Department and the other copy taken to the student's department. Medical excuses from your family physician will not be accepted.
Intercollegiate Athletics—Students participating in the Institute's intercollegiate athletic programs will be granted physical education credit for the season of participation.
Veterans—Students who have completed six months or more of active military duty are not required to participate in the physical education program, but may voluntarily enroll in any course on a space available basis.
Age—Students who are 25 or older at the date of matriculation are exempt from the physical education requirements but may voluntarily enroll in any courses on a space available basis.

In the event a student is unable to fulfill the requirement for either a baccalaureate or associate degree due to extenuating circumstances, the student's academic advisor must be consulted.

Physical Education Classes

Physical education courses are offered during all academic quarters, including summer. More than 60 courses are available during the year. Not all courses are offered every quarter. Registration for Physical Education classes will coincide with the dates and times for the academic departments. A nominal fee is charged in some courses requiring specialized instruction and/or facilities.

The following classes are offered as selections in the Physical Education Department.

Cardiovascular and strength activities
Aerobic Dance, Army Conditioning Drills, Conditioning, Jogging, Judo, Karate, Kung Fu, ROTC, Swimming for Fitness, Weight Training, Yoga and Tai Chi

Recreation and sports activities
Aquathenics, Archery, Badminton, Ballroom Dance, Basketball Officiating, Billiards, Bowling, Canoeing, Cross Country Skiing, Dance Performance I & II, Night Club Dancing, Diving, English Horseback, Fencing, Fishing, Frisbee, Golf, Hunting, Ice Skating, Juggling, Modern Dance, Outdoor Experiential Education, Racquetball, Scuba Diving, Self-Defense/ Women, Skiing (downhill), Swimming, Tennis, Water Polo, Western Horseback

Team activities
Basketball, Ice Hockey, Lacrosse, Soccer, Softball, Volleyball

Life support and safety programs
Care & Prevention of Athletic Injuries, CPR & Multi-Media First Aid, Emergency Tech Training, Life Saving, Water Safety Instruction, Health/ Mind-Body Connection

Intramural Activities

An extensive program of intramural activities is offered at RIT. Under the direction of the Department of Physical Education, Recreation and Intramurals, activities include co-rec, men's and women's teams in basketball, volleyball, softball, ice hockey, flag football, soccer, innertube water polo, bowling, tennis and golf.

Recreation

RIT offers some of the finest recreational facilities available in colleges today. Indoor facilities feature two gymnasiums, ice rink (with running surface around upper level), swimming pool, air support structure with three multipurpose courts, physical fitness and weight training center, recreational equipment room, wrestling room and game room (bowling, video games, billiards). Outdoor facilities include 12 tennis courts, an all-weather track and numerous athletic fields. The equip-

ment cage provides quality equipment for recreation, physical education instruction and intramural needs and interests. Services offered include: general information center, issuance of guest passes, equipment loan-outs and lost and found. The Recreation Department also provides a series of health education and exercise programs throughout the year.

Intercollegiate Athletics

For more than seven decades, intercollegiate athletics has developed a tradition of excellence at RIT. RIT's heritage in competitive athletics is a rich one. It has grown to become highly successful and widely recognized.

Since 1980, RIT teams have won 50 percent of their contests. Some of the team accomplishments have come in men's soccer (which has registered three consecutive undefeated regular seasons) and men's cross country (57-8 six-year record and top five finishes in the last two NCAA championships). In 1982-83 and 1984-85, men's hockey captured national championships.

Women's tennis is 68-9 since 1980 (including two undefeated seasons and two conference crowns). Lacrosse has won four conference titles in five years, and women's track boasted its first individual NCAA champion (Michele Jones in 100-meter dash) in 1986. Men's and women's swim teams have accounted for more than 100 Ail-Americans.

Each year more than 350 athletes take part in 21 varsity sports offered at the Institute. Fall competition features men's and women's cross country and women's tennis, volleyball, and soccer. Winter sports include wrestling, and men's and women's basketball, hockey, swimming, and indoor track. Spring competition takes place in baseball, men's lacrosse, and tennis, softball and men's and women's outdoor track.

A National Collegiate Athletic Association (NCAA) Division III member institution, RIT competes against schools in the northeast with similar academic and intercollegiate athletic philosophies. Known as the Tigers, RIT also is a member of the Eastern College Athletic Conference (ECAC), Independent College Athletic Conference (ICAC), and New York State Collegiate Women's Athletic Association (NYSWCAA).

Since 1970, RIT has been a member of the ICAC which also includes Alfred University, Clarkson University, Hobart and William Smith Colleges, Ithaca College, Rensselaer Polytechnic Institute and St. Lawrence University. ICAC soccer champions receive an automatic berth in the post-season NCAAs and the conference is consistently well-represented in numerous national championships.

Student Health Service

Student Health Service provides primary level medical care on an outpatient basis. The staff includes physicians, medical nurse practitioners, registered nurses, and an interpreter for the deaf. Some specialties—psychiatry, gynecology—are available on campus by appointments. In addition, Student Health Service provides health education programs.

Student Health Service is located on the second floor of the Administration Building. Students are seen on a walk-in basis (Monday through Friday, 8:30 a.m. to 4 p.m.; to 4:30 p.m. for emergencies). Appointments for follow-up treatment are arranged when necessary. A registered nurse is on duty in Nathaniel Rochester Hall in the evening^(4:30 to 11 p.m.). On Saturday and Sunday, a medical provider is available from 10 a.m. to 3:30 p.m. (to 4p.m. for emergencies) in Nathaniel Rochester Hall.

For emergency transportation, the RIT Ambulance is available. The unit can be reached through Campus Safety at 475-3333.

A Student Health fee per quarter 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 Student Health Service is not covered by this fee; there is a nominal charge for this service. Prescription medicines may be obtained from local pharmacies. The health fee does not include prescription medications.

The Institute **requires** students to maintain health insurance coverage as long as enrolled as a student at RIT. Students may obtain coverage either through RIT or their personal coverage.

Questions about Student Health Service or health insurance should be directed to the office (475-2255).

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.

Additional Resources

Campus Stores

RIT operates campus stores in the main campus and at City Center.

The main store, Campus Connections, is located on the west side of the College-Alumni Union. It consists of two selling floors and is divided into eleven departments.

1ST FLOOR:	Clothing and Accessories
	General Reading and Reference Books
	Gifts and RIT Insignia Shop
	Stationery
	Print, Poster ancl Framing Shop
	Supplies—school, office, art, engineering
	Home Accessories
2ND FLOOR:	Photography and Electronics
	Products for the hearing impaired
	Computers—hardware, software, accessories, computer furniture
	Course books—textbooks, study guides, etc.
	Sporting apparel and equipment

Store hours are:

Monday through Thursday, 8:30 a.m. to 8:30 p.m.; Friday, 8:30 a.m. to 4:30 p.m.; Saturday, 11 a.m. to 4 p.m.

Campus Connections accepts cash, checks, and charge cards (VISA, MasterCard) for payment. Certain students may have arrangements with a government agency to pay for some of their books and supplies; this is handled at our service counter on the first floor.

The Candy Counter in the lobby of the College-Alumni Union is where candy, tobacco products, notions, sundries, magazines, daily newspapers, snack items and tickets for most campus events are sold. Film for processing can also be dropped off there.

For current information about store hours and special sales, call the Bookstore Info Line at 475-6033.

Campus Safety Department

The Campus Safety Department is a professional security agency that serves and protects the college community 24 hours a day, seven days a week. While constantly patroling all campus areas, RIT does not assume liability for lost or stolen personal effects of students, faculty or staff. Students are encouraged to maintain an insurance policy on their own through a family insurance program.

The Campus Safety Department, located in the Grace Watson Dining Office, Building 25, offers a variety of services including: preventative safety measures; criminal investigations; lost and found property services; emergency family notification; and emergency assistance related to injury, illness, motor vehicle accidents and occurrence of fire. The department also offers educational and awareness programs that include: fire safety; alcohol awareness; personal safety; crime prevention; and sexual assault.

You can contact the Campus Safety Department these numbers:

General Information	475-2853
Parking Information	475-2074
Escort Service	475-2853
Lost and Found	475-2074
Emergency	475-3333
TDD (General or Emergency)	475-6654

Vehicle Parking and Registration

All New York State motor vehicle traffic laws are in effect on the RIT campus. RIT vehicle regulations sqpplement state laws. All drivers on RIT properties must make themselves aware of and abide by these regulations. These regulations require that all vehicles operated on the RIT campus by students, faculty and staff must be registered with the Campus Safety Department.

Failure to register a vehicle parked on campus will result in a fine. There are fines for other infractions of regulations as well. Fines are payable at the Bursar's Office in the George Eastman Memorial Building.

Questions regarding parking regulations should be addressed to the Parking Information Office at 475-2074.

RIT Ambulance

RIT Ambulance is a New York State certified volunteer ambulance service that operates in and around RIT's Henrietta Campus. The organization is an auxiliary of the Student Health Service. Its primary territory includes the main campus, Riverknoll, Perkin's Green, Colony Manor and Racquet Club apartment complexes and the Hilton Inn.

Any student, faculty or^taff member of RIT who is at least 18 years of age is eligible to join RIT Ambulance. Although most members eventually become certified emergency medical technicians, minimum requirements are a valid certification in CPR, a valid driver's license with a good driving record, and a sincere interest in ambulance work.

Applications may be obtained and submitted through Student Health Service on the second floor of the George Eastman Memorial Building (administration building). To obtain more information a message may be left at Student Health Service, 475-2255.

Endowed Professorships

College of Business

J. Warren McClure 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: Dr. David R. Methe

College of Continuing Education

Frederick H. Minett Professorship in Continuing Education

Established: 1972

Donor: Mr. Minett by bequest

Purpose: To provide a permanent memorial for Mr. Minett and to recognize his interest in students who obtain their education through the evening division

Held by: Professor John D. Hromi

Paul A. Miller Distinguished Professorship in Continuing Education

Established: 1978

Donor: RIT Board of Trustees

Purpose: To honor Dr. Miller on the occasion of his retirement as President of the Institute and to give lasting recognition to his standing as an acknowledged authority in the field of continuing education

Held by: Dr. Edward Schilling

Russell C. McCarthy Chair

Established: 1979

Donors: Mr. Fred Gordon, Mr. Lucius Gordon, Mixing Equipment Company and General Railway Signal Company, units of Genera! Signal Corporation, and other friends of Mr. McCarthy

Purpose: To honor Mr. McCarthy as Manager of the Industrial Management Council for twenty years and his role as a champion of and an authority on industry and business. Mr. McCarthy has served RIT as a Trustee and Honorary Trustee since 1947

Held by: Professor James Forman

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: Dr. Richard G. Budynas, P.E.

College of Fine and Applied Arts

Charlotte Fredricks Mowris Professorship in Contemporary Crafts

Established: 1976

Donor: Mrs. Charles F. Mowris

Purpose: To perpetuate her interest in the School for American Craftsmen through the work of faculty and students as talented craftsmen

Held by: Presently open

College of Graphic Arts and Photography

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 as a former president of the American Institute of Graphic Arts and to perpetuate his interest in the field

Held by: Professor Mark F. Guldin

Richard S. Hunter Professorship of Color Science, Appearance and Technology

Established: 1962

Donor: 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: Dr. Roy S. Berns

James £. McGhee Professorship in Photographic Management

Established: 1967

Donor: Master Photodealers & Finishers Association and friends of Mr. McGhee

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

Held by: Professor James E. Rice

Paul and Louise Miller Distinguished Professorship in Newspaper Production Management

Donor: Frank E. Gannett Newspaper Foundation

Purpose: To honor the former chairman of the Board of the Gannett Company, and to perpetuate his interest in good management practices in the newspaper industry

Held by: Professor Robert G. Hacker

Frederick and Anna B. Wiedman Professorship in Imaging Science

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: Presently open

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 those fields of study that have a humanistic perspective

Held by: Dr. Alan Trachtenberg

Arthur J. Gosnell Professorship in Economics

Established: 1987

Donor: Family and Friends of Arthur J. Gosnell

Purpose: To perpetuate the memory of Arthur J. Gosnell through giving recognition to the importance of good teaching in economics and by facilitating research into public policy questions

Held by: Dr. Thomas D. Hopkins

William A. Kern Distinguished Lecture Series

Established: 1971

Donor: Rochester Telephone Corporation

Purpose: To commemorate the 100th Anniversary of that company and to provide a memorial for a former president of the company and a man who served as RIT Trustee from 1959 to 1964

Held by: Dr. Bruce Austin

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Philip R. Tyler, BS, Rochester Institute of Technology; MBA, DBA, Michigan State University-Associate Professor
Stanley M. Widrick, BS, Clarkson College; MBA, SUNY-Buffalo; Ph.D., Syracuse University—Associate Professor
Julian E. Yudelson, BS, University of Pennsylvania; MBA, Emory University; Ph.D., Northwestern University—Associate Professor

SPECIAL APPOINTMENTS

Edward C. Mclrvine, BS, University of Minnesota; Ph.D., Cornell University—Professor
M. Richard Rose, BS, Slippery Rock; MS, Westminster College; Ph.D., University of Pittsburgh—Professor

College of Continuing Education

Donald D. Baker, BA, Trinity College; M.Ed., MBA, Ed.D., University of Rochester—Dean; Professor
Lawrence W. Belle, BA, MA, Case-Western Reserve, Ph.D., University of Rochester—Associate Dean
Loftus C. Carson, BA, Livingstone College; MA, Fisk University—Director; Community Programs & Services
Adelaide Perkins—Administrative Assistant to the Dean

ACADEMIC DIVISION

Lawrence W. Belle, BA, MA, Case-Western Reserve, Ph.D., University of Rochester—Associate Dean
Henry F. Cooke, BEE, MS, Ohio State—Director, Science and Technology; Assistant Professor
Daniel C.Smialek, BS, MS, Rochester Institute of Technology—Acting Director, Business and the Arts; Assistant Professor
Victoria M. Foote, BA, Colorado State; MA, University of Northern Colorado—Distance Learning Coordinator
Christine Hammer, BS, MS, SUNY Brockport—Associate Director, CCE Admissions and Student Services
Eric L. Bellmann, BS, SUNY Buffalo, MFA, Rochester Institute of Technology—Chairperson, Fine & Applied Arts/Crafts; Assistant Professor
Elizabeth A. Conley, BA, Nazareth College—Chairperson, Communications; Lecturer
Alfred C. Haacke, BS, Massachusetts Institute of Technology—Chairperson, Science and Computer Science; Associate Professor
Ronald J. Hilton, BS, SUNY Geneseo, MA, University of Arkansas; Ph.D., Syracuse-Chairperson, Humanities; Professor
Elizabeth M. Paciorek, BS, SUNY Buffalo—Chairperson, CAD/Drafting and Machine Tool Technology; Assistant Professor
Ronald E. Perry, B.Tech., Rochester Institute of Technology—Chairperson, Computer Serv ice Technology; Assistant Professor
Orville H. Adler, B.Tech., Rochester Institute of Technology—Assistant Professor
Mario S. DiQuilio, BS, Massachusetts Institute of Technology, MS, Conesus College, Rochester Institute of Technology—Associate Professor
Frederic P. Gardner, AB, St. Lawrence University; MS, State University College at Buffalo; Ed.D. SUNY Buffalo-Professor
Ruth L. Mets, BA, Alfred, Ed.M., Univerity of Rochester— Lecturer
Andrea C. Walter, BA, Duquesne University, MA, University of Pittsburgh, Ed.D., University of Rochester—Professor

CAREER AND HUMAN RESOURCE DEVELOPMENT

Dorothy K. Paynter, BA, MS Ed., SUNY Brockport, Ed.D., Syracuse University—Director; Professor
Stanley Bissell, BA, Ohio Wesleyan University, MA, University of Aukland, MS, SUNY Geneseo - Assistant Professor

College of Engineering

Richard A. Kenyon, MBE, MS, Ph.D., P.E.—Dean; Professor
Charles W. Haines, AB, MS, Ph.D. - Associate Dean; Professor
Margaret M. Urckfitz, AAS—Assistant to the Dean
Roy S. Czernikowski, BEE, ME, Ph.D.—Department Head, Computer Engineering; Professor
Swaminathan Madhu, MA, MSEE, Ph.D.—Department Head, Electrical Engineering; Professor
Richard Reeve, BS, MS, Ph.D.-Department Head, Industrial Engineering; Professor
Bhalchandra V. Karlekar, BEME, MSME, Ph.D., P.E.-Department Head, Mechanical Engineering; Professor
Lynn F. Fuller, BS, MS, Ph.D.-Director, Microelectronic Engineering; Professor

COMPUTER ENGINEERING DEPARTMENT

George A. Brown, BSEE, Vanderbilt; MSEE, University of Rochester-Professor
Tong-han Chang, BS, Jiao Tone University, Shanghai; Ph.D., Chinese Academy of Science, Peking-Associate Professor
Roy S. Czernikowski, BEE, Catholic University of America; ME, Ph.D., Rensselaer Polytechnic Institute-Professor
Kenneth W. Hsu, BS, National Taiwan Normal University; MSEE, Ph.D., Marquette University; PE—Professor
Ronald G. Matteson, Ph.D., Syracuse University—Associate Professor
V.C.V. Pratapa Reddy, BE.M. Tech., Osmania University, India; Ph.D..Indian Institute of Technology, Madras—Associate Professor

ELECTRICAL ENGINEERING DEPARTMENT

Lance Breger, BA, Lake Forest College; MSEE, Northwestern University; MS., Ph.D., University of Illinois—Assistant Professor
Joseph DeLorenzo, BS, Alabama; MS, Polytechnic Institute of Brooklyn; Ph.D., Boston University—Associate Professor
Soheil A. Dianat, BSEE, Aria-Mehr University, Iran; MSEE, Ph.D., George Washington University-Associate Professor
Lynn F. Fuller, BS, MS, Rochester Institute of Technology; Ph.D. SUNY at Buffalo-Professor
Roger E. Heintz, BSEE, Michigan Technological University; MSEE, Ph.D., Syracuse—Professor
[Catherine H. Hesler, BS, Clarkson College of Technology; MS, University of Vermont—Visiting Instructor
Mark A. Hopkins, BS, Southern Illinois University; MS, Ph.D., Virginia Polytechnic Institute and State University—Assistant Professor
Michael A.Jackson, BS, MS, SUNY Buffalo—Assistant Professor
Santosh K. Kurinec, BS, MS, Ph.D., University of Delhi, Delhi, India-Associate Professor
Bernard A. Logan, BS, M.Ed., University of Rochester—Associate Professor
Richard L. Lane, BS, Ph.D., Alfred University—Analog Devices Professor
Swaminathan Madhu, MA, University of Madras; MSEE, Tennessee; Ph.D., Washington-Professor
Athimoottil V. Mathew, BEE, Jadavpur University, India; M. Tech., Indian Institute of Technology; Ph.D. Queens University, Canada—Professor
Norman A. Miller, BSc, EE, London University, England—Lecturer
James E. Palmer, BS, University of Western Ontario; MSEE, University of Pennsylvania; Ph.D., Case Institute of Technology—Professor
Robert E. Pearson, AAS, BSEE, Rochester Institute of Technology-Assistant Professor
David Perlman, BS, MS, Cornell-Associate Professor
Mysore R. Raghuveer, BSEE, Mysore University, India; ME, Indian Institute of Science, Bangalore, India; Ph.D., University of Connecticut—Assistant Professor
Sannesi Ramanan, Ph.D., IIT, India—Assistant Professor

V.C.V. Pratapa Reddy, BE, M.Tech., Osmania University, India; Ph.D., Indian Institute ofTechnology, Madras—Associate Professor
Harvey Rhody, BSEE, University of Wisconsin; MSEE, University of Cincinnati; Ph.D., Syracuse University—Professor
Alton F. Riethmeier, BSEE, Valparaiso University; MSEE, University of Rochester—Associate Professor
Edward R. Salem, BSEE, Pennsylvania State; MSEE, Catholic University of America; Ph.D., Buffalo—Professor
Robert Spina, BS, Western Michigan University; MS, Rochester Institute of Technology—Visiting Instructor
David A. Sumberg, BA, Utica College of Syracuse University; MS, Ph.D., Michigan State University-Associate Professor
YushengT. Tsai, BSEE, National Cheng-Kung University, Taiwan; MSEE, National Taiwan University; Ph.D., Ohio State University
Fung-I Tseng, BSEE, Taiwan University; MSEE Chiao-Tung University, Taiwan; Ph.D., Syracuse—Professor
I. Renan Turkman, Diplome D'Ingenieur(MSEE); Docteur-Ingenieur, Institut Nationale des Sciences Appliques, Toulous, France—Associate Professor
Raman M. Unnikrishnan, BSEE, University of Kerala, India; MSEE, South Dakota State University; Ph.D., Missouri—Professor
Dr. Jayanti Venkataraman, BS, MS, Bangalore University; Ph.D., Indian Institute of Science, Bangalore, India—Associate Professor
Watson F. Walker, BSEE, Brooklyn Polytechnic Institute; Ph.D., Syracuse—Professor

INDUSTRIAL ENGINEERING DEPARTMENT

Madhu R. Nair, BS, Rochester Institute ofTechnology; MS, Lehigh University—Visiting Instructor
Sudhakar R. Paidy, BS, Osmania University, India; MSIE, Ph.D., Kansas State University—Professor
Richard Reeve, BS, MS, Ph.D., Buffalo—Professor
Jasper E. Shealy, BS, Georgia Institute ofTechnology; MS, Ph.D., SUNY at Buffalo-Professor
Paul H. Stiebitz, BS, ME, Rochester Institute of Technology—Assistant Professor
Brian K. Thorn, MS, Georgia Tech.—Assistant Professor

MECHANICAL ENGINEERING DEPARTMENT

Nir Berzak, BS, M.Sc., Technion Israel Institute of Technology; Ph.D., Columbia University-Visiting Associate Professor
Richard G. Budynas, BME, Union College; MSME, Rochester; Ph.D., Massachusetts; P.E.—Gleason Professor
Robert A. Ellson, BME, City College of New York; MSME, Ph.D., University of Rochester, P.E.—Associate Professor
Jon Freckleton, BSME, University of Rochester; P.E. —Lecturer
Hany A. Ghoneim, B.Sc., M.Sc., Cairo University, Egypt; Ph.D., Rutgers—Associate Professor
Amitabha Ghosh, B.Tech, M.Tech., Indian Institute ofTechnology, India; Ph.D., Mississippi State University—Associate Professor
Surendra K. Gupta, B.Tech., Indian Institute ofTechnology, India; MS, University of Notre Dame—Assistant Professor
Charles W. Haines, AB, Earlham; MS, Ph.D., Rensselaer Polytechnic Institute; Mathematics ana Mechanical Engineering—Professor
Robert J. Hefner, BS, MS, Ph.D., Georgia Institute ofTechnology—Associate Professor
Richard B. Hetnarski, MSME, Gdansk Technical University; MS, Warsaw University; Dr.Tech.Sci., Polish Academy of Sciences; P.E.—Professor
Satish Kandlikar, BE, Marathwada University, India; M.Tech., Ph.D. Indian Institute ofTechnology—Associate Professor
Bhalchandra V. Karlekar, BEME, College of Engineering, India; MSME, Ph.D., University of Illinois; P.E.—Professor
Mark Kempski, BS, Purdue University; MS, Ph.D., SUNY Buffalo—Assistant Professor
Richard A. Kenyon, BME, Clarkson College; MS, Cornell; Ph.D., Syracuse; P.E.—Professor
George T. Komorowski, BSME, MS, Rochester Institute ofTechnology—Assistant Professor, CAD System Manager
Chris Nilsen, BS, Rochester Institute ofTechnology; MSME, Worcester Polytechnic Institute; Ph.D., Michigan State; P.E.—Associate Professor
Alan H. Nye, BSEM, MSME, Clarkson College; Ph.D., University of Rochester—Associate Professor
Ali Ogut, B.Ch.E., Hacettepe University, Turkey; MS, Ph.D., University of Maryland—Visiting Assistant Professor
Frank Sciremammano, Jr., BS, MS, Ph.D., University of Rochester-Assistant Professor
Robert L. Snyder, BS, Rochester Institute ofTechnology; Ph.D., Iowa State; P.E.—Professor
Joseph S. Torok, BS, University of Akron; MS, Ph.D., Ohio State University—Assistant Professor
Panchapakesan Venkataraman, B.Tech., Indian Institute of Technology; MSME, Rice University—Assistant Professor
Wayne W.Walter, BE, State University of New York Maritime College, Bronx; MS, Clarkson College; Ph.D., Rensselaer Polytechnic Institute; P.E.—Professor

Academic Technical Associates

Vaudeen Abel—Technical Associate, Computer Engineering
Scott Blondell, AAS, Alfred State College—Technical Associate, Microelectronic Engineering
William Gallacher—Technical Associate, Industrial Engineering Department
David Hathaway—Technical Associate, Mechanical Engineering Department
Barbara Ryder, AAS, Onondaga Community College—Technical Associate, Electrical Engineering Department

Adjunct Faculty

Isaac Ajewole, Ph.D., University of Rochester
David DeMarle, BS, Iowa State University
Guillermo H. Garzon, BSME, MSME, University of Los Andes-Bogota, Colombia; Ph.D., University of Wisconsin-Madison
K.H. Gurubhasavaraj, Ph.D., Nebraska
Ti-Lin Liu, MS, Tsinghua University, Peking
Majid Rabbani, Ph.D., Wisconsin
James Schueckler, BS, MS, Rochester Institute ofTechnology
Dinesh Shah, BSME, University of Bombay, India; MSME, Illinois, Ph.D., Syracuse
Yusheng T. Tsai, BSEE, National Cheng-Kung University, Taiwan; MSEE, National Taiwan University, Taiwan; Ph.D., Ohio State University

College of Fine and Applied Arts

Robert H.Johnston, BS, Kutztown State College; MA, Columbia University; Ph.D., Pennsylvania State University—Dean; Professor
Peter Giopulos, BFA, Syracuse University; M.Ed., Ph.D. Pennsylvania State University—Associate Dean; Professor
Rose Marie Deorr, BS, Rochester Institute of Technology—Assistant Dean for Administration
Edward A. Lincoln, BA, Eisenhower College, Rochester Institute of Technology—Assistant Dean

SCHOOL OF ART AND DESIGN

Mary Ann Begland, BS, Ohio State University; MFA, Kent State University—Associate Professor
Donald Blair, BS, University of Nebraska; M.Arch., Yale University—Lecturer
Kener E. Bond, Jr., B.Ed., SUNY-Buffalo; MFA, Rochester Institute of Technology—Professor
Philip W. Bornarth, BAE, MAE, Art Institute of Chicago—Professor; Special Assistant to the Dean for Graduate Affairs
Nancy A. Ciolek, BFA, Indiana State University; MFA, Indiana State University—Visiting Assistant Professor
Robert A. Cole, BA, MS, University of Maryland—Associate Professor
David Dickinson,Chelsea School of Art, London, England; SKHS, Oslo, Norway; MFA, Rochester Institute ofTechnology—Professor; Chairman, Fine Arts
Joan Hantz, BA, Bennington College; MM, University of Michigan—Lecturer
Judy Heimann, BA, Bard College; MA, University of California-Gallery Consultant
Robert Heischman, BFA, Miami University; UCFA, Ruskin School of Art—Associate Professor
Glen Hintz, BA, Lafayette College; MS, The Medical College of Georgia—Assistant Professor
Barbara Hodik, BS Ed., Benedictine College; MA, New York University; Ph.D., Pennsylvania State—Professor
Robert M. Kahute, BFA, Syracuse University; MFA, Rochester Institute ofTechnology—Assistant Professor
Robert P. Keough, BFA, Rochester Institute ofTechnology; MFA, Rochester Institute ofTechnology—Professor
Robert Kerr, BFA, University of Illinois; MFA, Rochester Institute of Technology—Professor
Heinz Klinkon, BFA, Rochester Institute of Technology—Assistant Professor
Charles F. Lewis, B.Arch., Pratt Institute ofTechnology—Lecturer
Frederick Lipp, BAE, School of the Art Institute of Chicago; MFA, Rochester Institute ofTechnology—Professor
Steve Loar, BS, Murray State University; MA, Northern Illinois University—Assistant Professor
Craig J. McArt, BID, Syracuse University; MFA, Rochester Institute ofTechnology—Professor; Chairman ofIndustrial and Interior Design, Packaging Design >
Bernadette Merkel, BFA, MFA, Rochester Institute ofTechnology—Professor; Chairman of Graphic Design
Edward C. Miller, BFA, SUNY at Buffalo; MFA, Illinois State-Associate Professor
Robert C. Morgan, BA, University of Redlands; Ed.M., Northeastern University; MFA, University of Massachusetts; Ph.D., New York University—Professor
Ronald E. Padgham, BFA, Ohio Wesleyan; MFA, Syracuse University; Ed.D., University of Rochester—Professor
R. Roger Remington, BFA, Rochester Institute ofTechnology; MS, University of Wisconsin—Professor
Karen Sardisco, BS, State University of New York College at Buffalo; MFA, Rochester Institute of Technology—Lecturer
Luvon Sheppard, BFA, MST, Rochester Institute ofTechnology—Associate Professor
Joyce Shikowitz, BFA, Rhode Island School of Design; MFA, Indiana University—Assistant Professor
James H. Sias, BFA, MA, Michigan State University—Assistant Professor
Bruce Sodervick, BS, Rhode Island School of Design; MFA, Indiana University—Associate Professor
Joanne Szabla, BFA, Madonna College; MA, Catholic University of America; Ph.D., Walden University—Professor
James E. Thomas, BS, Philadelphia College of Art; MFA, Pennsylvania State University—Professor
Toby Thompson, BID, Syracuse; MFA, Rochester Institute of Technology—Professor
lames VerHague, BS, Massachusetts Institute ofTechnology; MS, Rensselaer Polytechnic Institute; BA, MFA, SUNY at Buffalo-Professor

Robert Wabnitz, Diploma, Rochester Institute ofTechnology; Certificate, University of Rochester—Professor
Joseph A. Watson, BFA, University of Georgia; MFA, Yale **University—** Associate Professor
Lawrence Williams, BFA, Kansas City Art Institute; MFA, University of Illinois—Professor
Norman Williams, BFA, MS, Syracuse University—Associate Professor; Chairman of Foundation Studies

SCHOOL FOR AMERICAN CRAFTSMEN

Donald G. Bujnowski, BS, SUNY at Buffalo; MA, University of Minnesota—Professor
Richard A. Hirsch, BS, SUNY at New Paltz; MFA, Rochester Institute ofTechnology—Associate Professor
William A. Keyser, Jr., BS, Carnegie-Mellon Institute ofTechnology; MFA, Rochester Institute of Technology—Professor; Chairman of Crafts
Max L. Lenderman,BS. MS, Indiana State; MFA, University of Kansas-Professor
Robert D. Schmitz, BS, East Carolina University; MS, Alfred University; MFA, Wisconsin—Professor
Douglas E. Sigler, BFA, MFA, Rochester Institute ofTechnology—Associate Professor
Mark Stanitz, BFA, MA, Kent State University—Assistant Professor
Michael Taylor, BS, Middle Tennessee State University; MA, MFA, East Tennessee State University—Associate Professor
Leonard A. Urso, BFA, MFA, SUNY at New Paltz—Assistant Professor

College of Graphic Arts and Photography

Edward C. Mclrvine, BS, Ph.D.-Dean
Carole A. Sack, BA, Ph.D.-Associate Dean for Academic Affairs
John L. Kronenberg, BS—Consultant
Gaylene Morrill, BS—Senior Communications Coordinator
Virginia Burchill, Administrative Assistant

CENTER FOR IMAGING SCIENCE

Rodney Shaw, BS, Leeds University; Ph.D., Cambridge University-Director
Roy S. Berns, BS, MS, University of California; Ph.D., Rensselaer Polytechnic Institute—Associate Professor
Roger L. Easton, Jr., BS, Haverford College; MS, University of Maryland; Ph.D., University of Arizona—Assistant Professor
Margaret Evans, BA, Goddard College—Coordinator of Academic Services
Mark D. Fairchild, BS, MS, Rochester Institute ofTechnology—Instructor
Hadrian Lechner, BS, MS, Boston University—Assistant Professor
Dana Marsh, BS, California State University; ME, Rochester Institute ofTechnology; Ph.D., University of California/Riverside—Associate Professor
Pantazis Mouroulis, B.Sc., University of Athens; Ph.D., University of Reading—Assistant Professor
Jeff Pelz, BFA, MS, Rochester Institute of Technology—Instructor
Harvey Rhody, BSEE, Wisconsin; MSEE, Cincinnati; Ph.D., Syracuse University—Professor
John Schott, BS, Canisius College; MS, Ph.D., Syracuse University—Associate Professor

Adjunct Faculty

Joseph Altman, BS, Massachusetts Institute ofTechnology
Robert Clark, BS, Massachusetts Institute ofTechnology— Ph.D., University of Maryland
Robert Daly, Ph.D., University of Arizona
Edward Granger, Ph.D., University of Rochester
Joanne Mitchell, BS, University of Rochester; Ph.D., Massachusetts Institute ofTechnology
Harry Roberts, BS, University of Rochester
Donald Smith
Paul Wilson, BA, MA, University of Cincinnati; Ph.D., University of Illinois
Donald Wright, BS, MS, University of Rochester

SCHOOL OF PHOTOGRAPHIC ARTS AND SCIENCES

Thomas P. Iten, BFA, MS-Director, Professor
Owen Butler, BFA—Chair, Applied Photography; Associate Professor
John Ciampa, BA, MA, J D - Director, American Video Institute; Associate Professor
Andrew Davidhazy, BFA, MFA—Chair, Imaging and Photographic Technology; Professor
William W. DuBois, BFA, M.Ed.—Chair, Biomedical Photographic Communications; Associate Professor
James E. Rice—Chair, Photographic Processing and Finishing Management; McGhee Professor
Malcolm Spaull, BS, MFA-Chair, Film and Video; Assistant Professor
Ken White, BA, MA, MFA-Chair, Fine Art Photography; Assistant Professor

Faculty

Patricia Ambrogi, MFA, Visual Studies Workshop—Lecturer
Carl Battaglia, BA, Boston College; MFA, Syracuse University—Associate Professor
Owen Butler, BFA, Rochester Institute of Technology—Associate Professor
John Ciampa, BA, Boston University; MA, University of Michigan: JD, Cornell University-Associate Professor
Guenther Cartwright, BA, University of Oregon; MFA, Buffalo—Assistant Professor
Kathleen Collins, AB, Stanford University; MFA, Rochester Institute ofTechnology—Associate Professor
John C. Compton, BS, MS, Rochester Institute of Technology—Professor
Andrew Davidhazy, BFA, MFA, Rochester Institute of Technology-Professor
Denis Defibaugh, BS, Rochester Institute of Technology—Instructor
Steve Diehl, BS, University of Miami, Rochester Institute ofTechnology—Assistant Professor
William W. DuBois, BFA, Ohio University; M.Ed., Bowling Green State University—Associate Professor
Lothar K. Engelmann, Ph.D., University of Frankfurt—Professor
Loret Falkner, MFA, Indiana University—Visiting Lecturer
Richard Floberg, BA, Iowa State; MS, Boston University—Associate Professor
James Gray, BS, Michigan State University—Instructor
Mark Haven, AB, Lebanon Valley College—Assistant Professor
John Head, MFA, Rochester Institute of Technology—Assistant Professor
Bradley T. Hindson, BA, Rutgers University; MFA, Ohio University-Associate Professor
Jack Holm, BS, Texas A&M University—Instructor
John E. Karpen, BS, MFA, Rochester Institute of Technology—Associate Professor
Robert Kayser, BS, City College of New York; MS, Rochester Institute ofTechnology—Associate Professor
Weston D. Kemp, MFA, Rochester Institute of Technology—Associate Professor
Russell C. Kraus, BA, William Paterson; Ed.D., University of Massachusetts-Amherst—Associate Professor
Robert B. Kushner, MS, Rochester Institute of Technology—Professor
Martha Leinroth, AB, Wellesley College; MFA, Rhode Island School of Design—Lecturer
Howard Lester, BA, MFA, University of California-Los Angeles—Assistant Professor
Howard LeVant, BS, Institute of Design, Illinois Institute of Technology; MS, Rochester Institute of Technology—Associate Professor
James Megargee — Instructor
Glenn Miller, BS, Rochester Institute of Technology—Associate Professor
Richard Norman, BS, Rochester Institute of Technology—Lecturer/Technical Associate
Willie Osterman, BFA, Ohio University, MFA, University of Oregon—Assistant Professor
Michael R. Peres, BS, Rochester Institute of Technology; BA, Bradley University—Instructor
Will Roger Peterson, BFA, MFA, Rochester Institute of Technology-Visiting Instructor
Doug Rea, BS, Union College; MFA Rochester Institute ofTechnology—Associate Professor
John Retallack, BFA, Rochester Institute of Technology—Assistant Professor
James E. Rice, BS, Cornell University—James E. McGhee Professor
David J. Robertson, BFA, Pratt Institute; MA, Columbia University Teachers College—Professor
Elliott Rubenstein, BA, MS, St. John's University; MFA, SUNY at Buffalo—Associate Professor
Richard Slater, BS, Rochester Institute of Technology—Lecturer/Technical Associate
Malcolm Spaull, BS, St. LawTence University; MFA, Rochester Institute of Technology—Associate Professor
Leslie Stroebel, BS, M.Ed,, Ed.D., University of Rochester—Professor
Nancy Stuart, BA, MS, Rochester Institute of Technology—Assistant Professor
Erik Timmerman, BS, University of Wisconsin; MFA, Southern California—Associate Professor
Charles C. Werberig, BFA, MS, Syracuse University—Associate Professor
Jeff Weiss, BS, University of Michigan—Assistant Professor
Ken White, BA, Princeton University; MA, MFA University of New Mexico—Assistant Professor
Tom Muir Wilson, BFA, Cranbrook Academy of Art; MFA, Rochester Institute of Technology—Associate Professor
Richard D. Zakia, BS, Rochester Institute ofTechnology; Ed.D., University of Rochester— Professor

Adjunct Faculty

Lynne Bently-Kemp, BFA, MFA, Rochester Institute ofTechnology
Judith Berry
John Delly, MS, MBA, Roosevelt University
David A. Engdahl, BS, M.Ed., University of Rochester
Nicholas M. Graver
David Joseph, MFA, Rochester Institute ofTechnology
"William Klein, MSEE, Purdue University
Leon LeBeau, Ph.D., University of Illinois
Judith Levy
Arnold Lungershausen, MA, Ohio University
Charles Lysogorski, BFA, State University College at New Paltz
Wes Morningstar, BS, Rochester Institute of Technology
Allie C. Peed, BS, EE, **University** of Kentucky
James Reilly, BA, Franklin and Marshall; MA, SUNY Buffalo-Director, Image Permanence Institute
Grant Romer, BFA, Pratt Institute; MFA, Rochester Institute of Technology—Conservator, Photographic Collection, International Museum of Photography, George Eastman House
Martin Scott, AB, Lafayette College

SCHOOL OF PRINTING MANAGEMENT AND SCIENCES

Miles F. Southworth, BS, M.Ed.—Director; Professor
Archibald D. Provan, BS, M.Ed.—Administrative Coordinator; Associate Professor
Warren Daum, BS, MS—Consultant to the Director
Hugh R. Fox, AB, JD-Staff Chairman, Management Section; Assistant Professor
Marie Freckleton, BFA, MST-Staff Chairman, Aesthetics Section; Assistant Professor
Walter G. Home, BS, M.Ed.-Staff Chairman, Press Section; Professor
Barbara Birkett, BA, MBA-Coordinator, Graduate Program
Mark F. Guldin, BS, MS, Ph.D.-Coordinator, Graduate Program
Joseph L. Noga, BS, MS—Coordinator, Graduate Program; Professor
Linda Tolan, BS, MS—Assistant to the Director

Faculty

Barbara Birkett, BA, Aquinas College; MBA, Michigan; MBA Rochester Institute ofTechnology—Assistant Professor
William H. Birkett, BS, Illinois; MBA, Michigan, CMA—Associate Professor
Joseph E. Brown, BS, Carnegie-Melfon University; MS, Kansas State—Professor
Walter A. Campbell, BA, Hobart; MBA, M.Ed., Rochester—Professor
Robert Y. Chung, BA, Eastern Washington State University; MS, Rochester Institute of Technology-Associate Professor
Frank J. Cost, BS, Eisenhower College—Assistant Professor
W. Frederick Craig, BS, West Virginia Institute ofTechnology; M.Ed., University of Rochester-Associate Professor
Hugh R. Fox, AB, Dartmouth; JD, Rutgers Law School—Assistant Professor
Clifton T. Frazier, BS, West Virginia Institute ofTechnology; M.Ed., University of Rochester—Associate Professor
Marie Freckleton, BFA, MST, Rochester Institute of Technology-Assistant Professor
Mark F. Guldin, BS, Rochester Institute ofTechnology; MS, South Dakota State; Ph.D., Iowa-Melbert B. Caryjr. Graphic Arts Professor
Robert 6. Hacker, BS, Illinois State; MS, South Dakota State; Ph.D., Iowa—Paul and Louise Miller Professor
Samuel B. Hoff, BA, MA, California State University—Assistant Professor
Walter G. Home, BS, Rochester Institute ofTechnology; M.Ed., University of Rochester—Professor
Herbert H.Johnson, BS, Rochester Institute of Technology—Associate Professor
John C. McCracken, BS, Rochester Institute ofTechnology—Instructor
Joseph L. Noga, BS, Central Connecticut State University; MS, University of Bridgeport—Professor
William A. Pakan, BS, Carnegie Institute ofTechnology; MA, Ph.D., Kent State University—Professor
David P. Pankow, BA, MA, Brooklyn; MLS, Columbia-Assistant Professor
Archibald D. Provan, BS, Rochester Institute ofTechnology; M.Ed., University of Rochester—Associate Professor
Harry Rab, BSME, MSME, Newark College of Engineering—Assistant Professor
Werner Rebsamen, Diploma, Academy of Fine Arts, Zurich—Professor
Eric Sanderson, BS, Eastern Washington University—Instructor
Emery E. Schneider, BS, Southern Illinois University; M.Ed., Rochester—Associate Professor
Julius L. Silver, BA, Brooklyn College; Ph.D., Connecticut-Professor
Miles Southworth, BS, University of Michigan; M.Ed., University of Rochester—Professor
James R. Walsh, BS, Rochester Institute ofTechnology; M.Ed., University of Rochester—Associate Professor
Charles J. Weigand, BS, MS, SUC at Oswego—Associate Professor

Adjunct Faculty

John Lovenheim, BA, Case Western Reserve University; MBA, Harvard University

Academic Technical Associates

David L. Dembroski—Technical Associate
Daniel Gramlich—Technical Associate
Barry Lee—Technical Associate
John Marciniak—Coordinator, Technical Services
Blair Richards—Technical Associate

College of Liberal Arts

William J. Daniels, BS, MS, Ph.D.,-Dean, Professor
David Murdoch, BA, MA, Ph.D.-Assistant Dean for Special Programs; Professor
Paul Brule, BA, MA-Division Chairperson, Social Science; Assistant Professor
Robert E. Golden, AB, MA, Ph.D.,-Division Chairperson, Language, Literature and Communication; Professor
Glenn J. Kist, AB, MA, Ph.D.-Associate Dean
Murli M. Sinha, AB, MA, Ph.D.,-Division Chairperson, Behavioral Science; "-ofessor
Diane Hope, BS, MA, Ph.D.-Program Chairperson, Professional and Technical Communication; Associate Professor
Richard B. Lewis, BA, MA-ProgTam Chairperson, Criminal Justice—Assistant Professor
Katherine Mayberry, BA, Ph.D.-Program Chairperson, Technical and Liberal Studies Option
Margery S. Reading-Brown, BA, M.Ed., MA, Ph.D.-Graduate Program Chairperson, School Psychology; Assistant Professor
Alan Trachtenberg, AB, MA, Ph.D.—Caroline Werner Gannett Professor of the Humanities
Michael J. Vernarelli, AB, MA, Ph.D.—Program Chairperson, Economics; Associate Professor
Helen Wadsworth, BS, MSW-Program Chairperson, Social Work; Assistant Professor
Thomas D. Hopkins, Arthur J. Gosnell Professor in Economics
Bruce A. Austin, BA, MA, Ph.D - William A. Kern Professor in Communications

LANGUAGE LITERATURE AND COMMUNICATION DIVISION

Sam Abrams, AB, Brooklyn College;' MA, University of Illinois—Associate Professor, Literature
Bruce A. Austin, BA, Rider College; MS, Illinois State University; Ph.D., Temple University—Professor, Communications
Arnold J. Berman, BA, Hofstra University; MA, Ph.D., New York University; MSW, Syracuse University—Associate Professor, Literature
Andrew W. Boone, BA, Stonehill College; MA, Middlebury College-Lecturer, Language
Sarah Collins, AB, Centre College; MA, Ph.D., Indiana University—Professor, Literature
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Barbara J. Ciccarelli, BS, SUC at Buffalo—Production Manager, Hettie L. Shumway Dining Commons
Robert O. Day, AAS, Rochester Institute of Technology—Manager, Hettie L. Shumway Dining Commons
Paulette F. Gaudino, AAS, Paul Smith College; BS, Rochester Institute of Technology—Production Manager, Grace Watson Dining Hall
Janet Olivieri, AAS, SUNY at Delhi—Manager, Grace Watson Dining Hall
Lin McQuade-Johnson, BS, SUNY at Brockport—Manager, Catering and ClarK Dining Room
Susan M. Long, BS, Houghton College—Budget Coordinator/Department Auditor
Shirley Masseth—Administrative Assistant, Meeting Planning and Catering Services
Mary Anne McQuay, AAS, Monroe Community College; BS, Buffalo State—Manager, College-Alumni Union Cafeteria
David Nowak, BS, Rochester Institute of Technology—Manager, Ritskeller

MAIL& REPROGRAPHIC SERVICES

Hilliary Dunn—Manager
Catherine Ciardi, AAS, Community College of the Finger Lakes— , Assistant Manager

POST OFFICE CONTRACT STATION

Marie Cervantes-Roberts, AAS, Monroe Community College; BS, Rochester Institute ofTechnology—Manager

ICE ARENA

John Simon—Director

PURCHASING

Gary B. Smith, BA, Ohio University; MA, Western Illinois University-Director
Marlene Bice, AAS, Rochester Institute ofTechnology—Purchasing Agent

Deborah Bourcy, BS, Rochester Institute ofTechnology—Administrative Assistant
Robert Goldstein—Purchasing Agent

Campus Safety

Leslie Scoville, BS, Trenton State—Director
Jeffrey Meredith, AAS, Monroe Community College; BS, Rochester Institute ofTechnology—Assistant Director for Parking and Special Events
Richard Sterling, BS, SUNY Empire State College—Assistant Director, Operations
Shirley Besanceney, BS, SUNY Geneseo—Institute Parking Appeals Administrator
Robert Day, AAS, Monroe Community College—Public Safety Administrator
Sharon Dowdey, BS, University of Texas at Arlington—Assistant to the Director
Lee Struble, BA, Maryville College—Loss Prevention Specialist

Controller

William J. Welch, BBA, Niagara University; CPA, New York-Controller
David R. Moszak, AAS, Alfred State—Assistant Controller
Marie Nitzman—Inventory Specialist
Margaret McEwen-Craven, BS, SUNY Brockport; BS, MBA, Rochester Institute ofTechnology—Staff Accountant

ACCOUNTING

James C. Murphy, BS, University of Rochester—Director, Accounting/Payroll Supervisor
John P. McCormick, BBA, St. Bonaventure; MBA, University of Rochester—Accounting Supervisor
Rose Galansky, BS, Rochester Institute of Technology—Staff Accountant
Thomas Ricci, BS, St. John Fisher College—Staff Accountant
Bethany Wills—Staff Accountant

PAYROLL

James C. Murphy, BS, University of Rochester—Director, Accounting/Payroll Services
Margaret Gardner—Assistant Supervisor
Val lerie A. Liotta—Payroll Supervisor

BUDGET

David B. Caiman, BS, Rochester Institute of Technology—Director
William J. Bianchi, BS, Rochester Institute of Technology—Assistant Director

BURSAR'S OFFICE

Richard B. Schonblom, BS, Rochester Institute ofTechnology—Bursar
Rosemarie Gross—Associate Bursar
Sally Luton, BS, Rochester Institute of Technology—Student Accounts Coordinator

Collections

Kenneth Kathan, AAS, Niagara Community College; BS, Rochester Institute of Technology—Associate Bursar
Mary Beth Burns—NDSL Repayment Coordinator

Personnel

Jeanne M. Healy, BS, LeMoyne College; MBA, Rochester Institute ofTechnology—Director
Katherine Carcaci—Senior Employee Relations Administrator
Gen Curwin, BA, M.Ed., University of Massachusetts; MBA, Rochester Institute of Technology—Senior Employee Relations Administrator
Linda D. Dumas, BS, Spelman College—Employee Relations Administrator
Charles L. Hayes, MS, Springfield College—Benefits Manager
James M. Papero, BS, Ed.M., University of Rochester—Employee Assistance Program Coordinator
Charmel Trinidad, BS, Rochester Institute ofTechnology; MBS, Michigan State University—Employment Specialist
Nancy Wallace, BA, Muhlenberg College—Benefits Specialist
Julia B. Wood, BA, University of New Hampshire—Training Specialist

Physical Plant

William H. Mets, AAS, NYSU at Farmingdale; BS, University of Rochester—Director
Clifford E. Velte, BS, Tri-State University—Director for Environmental Services
Lodewyk Boyon, AAS, Grotius College—Director for Energy Conservation
Donald G. Burkhardt, ABA, Rochester Business Institute-Director for Administrative Services
Roy S. Demenint, Jr., BS, Clarkson College—Director for Operations
Elizabeth Nolan Beal—Director for Telecommunications Services
Jan E. Reich, BS, Pennsylvania State University—Director for Plant Engineering

Office of Facilities Planning and Utilization

J. Scott Lawson, B.Arch., Rensselaer Polytechnic Institute, RA, N.Y.S.—Director
Kevin Buck, BFA, California College of Arts and Crafts—Assistant Director
Kate Ostrosky, AAS, SUNY at Alfred—Facilities Inventory Coordinator
Anita Hogan, AAS, CCFL-Staff Assistant

RIT Real Estate Ventures

Eric M. Hardy, BA, Tufts University, M.Ed., Cortland State—Director
Anita Hogan, AAS, CCFL-Staff Assistant

DIVISION OF GOVERNMENT AND COMMUNITY RELATIONS

William E. Castle, BS, Northern State Teacher's College; MA, University of Iowa; Ph.D., Stanford University—Vice President, Government Relations, RIT; Director, NTID
Deborah M. Stendardi, BA, SUNY Cortland; MPA, SUNY Albany-Director
Arlene M. Evangelista, BA, Nazareth College; MBA, Rochester Institute of Technology—Assistant Director

INSTITUTIONAL ADVANCEMENT DIVISION

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Sharon A. Stevenson—Administrative Assistant to the Vice President
Jack F. Smith, BA, University of Pittsburgh—Associate Vice President for Communications

Communications

Jack F. Smith, BA, University of Pittsburgh—Associate Vice President
William McKee, BA, Syracuse University—Director of Communications
David C. Abbot, BFA, MFA, Rochester Institute of Technology-Director of Creative Services
Karen Beadling, BA, Antioch College—Director of Publications
Sarah Breithaupt, BS, Bowling Green State University—Senior Communications Coordinator
Colleen Collins, BFA, Rochester Institute of Technology—Senior Graphic Designer
Gail Courmettes—Production Coordinator
J. Roger Dykes—Sports Information Director
Neil Fagenbaum, BS, SUNY at Geneseo—Associate Director; Media Relations
Edward Gala, BA, Syracuse University—Associate Director, Advertising and Part-Time Enrollment
Carolyn M. Hanson—Administrative Assistant to the Associate Vice President
Mary Hedglon, BA, St. Bonaventure University—Senior Communication! Coordinator
Linda Kanaley—Group Leader
Pamela M. King, BFA, Rochester Institute of Technology—Art Director
Grace A. Lazzara, BA, University of Rochester; MA, Northeastern University—Senior Communication: Coordinator
Karen Miller, BA, Virginia Polytechnic Institute—Senior Communications Coordinator
Mary Jo Piatt, AAS, Monroe Community College—Senior Production Coordinator
Chris Quillen, BFA, Rochester Institute of Technology—Manager of Photography
Sarah Southgate, BA, Manhattanville College—Senior Graphic Designer
A. Sue Weisler, BFA, Rochester Institute of Technology—Senior Staff Photographer
Diane Zielinski, BA, St. Bonaventure University—Senior Communications Coordinator

Institutional Research and Policy Studies

John M. Whitely, BS, MBA, Rochester Institute ofTechnology—Director
Robert Bowen, BA, MA, SUNY College at Brockport; MS. Ed., Ph.D., University of Rochester-Assistant Director
Alice White—Data Reports Assistant
Joan C. Dammeyer, BS, Rochester Institute of Technology—Sr. Research Assistant

STUDENT AFFAIRS DIVISION

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H. Preston Herring, BA, West Virginia Wesleyan College; M.Ed., University of Vermont; Ph.D., Michigan State University—Assistant Vice President
Elaine M. Spaull, BA, George Washington University; MA, Georgetown University; Ph.D., SUNY, Buffalo-Assistant Vice President for Student Affairs and Director of Complementary Education

Campus Ministries

Fr. James Sauers—Director, Catholic Campus Minister
Deacon Patrick Graybill—Catholic Campus Minister Liaison to the Hearing Impaired
Rev. Linda Dolby —United Protestant Chaplain
Rev. Jeffrey Hering—Lutheran Campus Minister
Rev. David Brunswick-Interdenominational Gospel Worship Minister
Simeon Kolko—Hillel Director
Rev. Lawrence Mothersell—Episcopal Campus Minister
Sr. Marlene Vigna—Catholic Campus Minister
Sally Taylor—Baptist Campus Minister
Rabbi Nechemia Vogel—Chabad/Lubavitch Campus Minister

Complementary Education

Elaine M. Spaull, BA, George Washington University; MA, Georgetown University; Ph.D., SUNY, Buffalo-Director
Joeann M. Humbert, BA, Villa Maria College—Coordinator of Community Services Projects

Nancy Shapiro, BA, Immaculata College; MS, University of Rochester—Coordinator of Group Development Projects
Patricia UsiatynsKi-Coordinator, Outdoor Experiential Education

Counseling Center

Catherine Steel, BA, University of Western Ontario; M.Ed., Washington University; Ph.D., University of Missouri—Director; (Associate Professor)
Harry Merryman, BS, MS, Ph.D., University of Oregon—Assistant Director; (Associate Professor)
Gaillard Ashley, BS, University of Connecticut; Ph.D., Syracuse University—Counselor; (Associate Professor)
Carolyn Buntich, BS, SUC at Brockport; MS, Nazareth College—Psychometrist
Laura Cann, BA, Smith; MS, SUC at Brockport—Coordinator of Developmental Programs; (Assistant Professor)
Carolyn Berquist DeHoritv, BA, Earlham College; MS, Rochester Institute of Technology—Counselor; (Instructor)
Jean Donahue, AS, Empire State College—Psychometrist
Linda Garfinkel, BS, Purdue University, MA, SUC at Brockport-Psychometrist
Mahlon Gebhardt, AB, Albright; M.Ed., Lehigh University-Counselor; (Associate Professor)
William Holmquist, BA, Northwestern University, M.Minn. McCormick Theological Seminary; Ed.M., University of Rochester—Counselor; (Associate Professor)
Kathleen Kane, BA, Kent State University; MS, SUC Brockport—Counselor
James Kestenbaum, BS, Union College; MA, Ph.D., University of Maiyland—Counselor; (Assistant Professor)
John Mitchell, BS, Ohio State University; MS, Ph.D., University of Pittsburgh—Counselor; (Assistant Professor)

Higher Education Opportunity Program

Linda Meyer, BA, University of Rochester; MA, SUNY Brockport-Acting Director
Yanick Heriveaux Allen, BS, M.Ed, SUNY Brockport—Counselor (Instructor)
Sharon Belle, BA, M.Ed., SUNY Brockport—Assistant Director
Hussain Ahmen, BS, MS, SUNY Cortland—Counselor; (Instructor)

Horton Child Care Center

Anne Hoenig, BA, The College of Wooster; MSEd., Nazareth College-Director
Lita Boudakian, BA, Queens College; MA, Southern Connecticut State College—Teacher
Carolyn Chizk, BA, Buffalo State-Teacher
Robin Rushing, BS, SUC Brockport—Teacher
Betty Sheridan, AAS, Monroe Community College—Assistant Teacher

International Student Affairs

Barbara Letvin, BS, Ohio State University; MS, SUNY at Brockport—Director
Mary Ann Campbell, BA, St. Mary's College—Assistant Director

Department of Intercollegiate Athletics and Department of Physical Education, Intramurals and Recreation

Louis W. Spiotti, Jr., BS, Ithaca; MS, Ed., SUNY at Brockport—Director, Department of Intercollegiate Athletics; Assistant Professor
Fred Bleiler, BS, MS, Ithaca College—Director, Department of Physical Education, Intramurals and Recreation; Professor
Neil A. Kromer, BA, Eisenhower College—Assistant Director for Operations, Intercollegiate Athletics
Greg Moss, BS, SUNY at Oneonta-Assistant Director, Physical Education, Intramurals and Recreation
Daryl C. Sullivan, BS, Rochester Institute of Technology—AssistantDirector, Physical Education, Intramurals and Recreation; Assistant Professor
Louis A. Alexander, Jr., BS, University of Rochester—Chairman, Independent Study for Physical Education; Events Assistant, Alumni Relations; Professor
John P. Buckholtz, Jr. BS, SUNY at Cortland—Assistant Professor
Earl W. Fuller, BS, Waynesburg State College; M.Ed., Pittsburgh-Wrestling Coach; Professor
Janet Jones, BS, MS, SUNY at Brockport-Head Coach, Softball and Volleyball, IA
Douglas j'. May, BS, SUNY at Brockport; MS, University of North Carolina at Chapel Hill—Men's Soccer Coach; Associate Professor
Robert H. McVean, BS, SUNY at Brockport—Basketball Coach; Assistant Professor
Ann Nealon—Women's Tennis Coach; Assistant Professor
Luigi Rende, BS, SUNY at Cortland; MS, Ohio University—Coordinator, Sports Medicine, Intercollegiate Athletics
Kathy Robords, BS, SUNY at Cortland—Women's Swim Coach; Assistant Professor
Linda Sallade—Administrative Assistant, Physical Education, Intramurals and Recreation
Helen Smith—Professor
Peter J. Todd, BS, SUNY at Cortland—Men's Track and Cross Country Coach; Associate Professor

Office of Minority Student Affairs

Michael Ayewoh, BS, Tennessee State University; Ms, M.Ed., Ph.D., Pennsylvania State University-Director; (Assistant Professor)

Office of Special Services

Marie Giardino, BA, Nazareth College; Middlebury College-Director
Jacqueline Lynch Czamanske, MS. Ed., Nazareth College of Rochester-Academic Coordinator/Learning Disabilities Specialist
David L. Watson, BA, MA, University of Montana—Counselor

Orientation and Special Programs

Dawn T. Murlev, BS, Rochester Institute of Technology—Director
Cheryl H. Phillips—Assistant to the Director

Residence Life

Howard Ward, BA, Mount Union College; MA, Bowling Green University—Director
Daniel Ambrose—Coordinator Staff Training & Development for Student Development
Nancy Burgess, BA, M.Ed., Alfred University—Assistant Director of Off Campus and Apartment Life
Renee Camerlengo, BA, SUNY Oswego; M.Ed., University of Vermont—Area Complex Director
Carla DiLella—Coordinator of Assignments
Anne Dohrenwend, BA, SUNY Geneseo; MS, University of Vermont—Area Complex Director
Mary Every—Coordinator of Summer Conferences/Special Projects
Jane Hendriksma, BA, Calvin College; MA, Michigan State University—Assistant Director for Student Development
Carol Reed, BA, Ladycliff College; M.Ed., University of Southern Maine—Assistant Director for Administrative Services
Nancy Rienzo—Administrative Assistant, Off Campus and Apartment Life
John Weas, BA, MA, Indiana University—Director of Off Campus and Apartment Life
Allison Wildridge, BA, Geneseo; BS, Miami University—Area Complex Director
Lillie Williams—Coordinator of Purchasing

Student Health Service

E. Cassandra Jordan, BA, Clark College; BS, Meharry Medical College; MS, SUNY at Geneseo-Director
Igor Mihajlov, MD, Faculty of Medicine, Zagreb University-Medical Director
Laura Greene Wiegand, MD, University of Rochester—Staff Physician
Martin Zinaman, MD, Downstate Medical Center—Staff Physician
W. Patrick Bernal, MD, University of Virginia—Part-time Physician
Julie Leonardo, BS, MS, University of Rochester School of Nursing-Nurse Practitioner
Joanne Matthews, BS, Alfred University; MS, University of Rochester School of Nursing—Nurse Practitioner
Debra Cummings, RN, Highland Hospital School of Nursing; BS, Nazareth College-Head Nurse
Debra Holmes, RN, St. Joseph's School of Nursing—Staff Nurse
Deanna Turner, RN, Swedish Covenant Hospital School of Nursing—Staff Nurse
Alice Cutaiar, RN, Highland Hospital School of Nursing; AAS, Monroe Community College—Staff Nurse
Kelli McMahon, BS, SUNY at Brockport—Health Education Coordinator

Student Activities and Union Services

Helene K. Manglaris, BS, MS, SUC, Brockport—Director
Michael T. D'Arcangelo, BA, Westminster College; MA, Bowling Green State University—Assistant Director
Dorothy J. Brown, BA, Daemen College; MS, SUNY at Buffalo-Coordinator of Greek Affairs/ Student Affairs
Richard Morse,AAS, CCFL-Coordinator for Program/Building Support Services
Deborah Waltzer, BSS, Northwestern University—Coordinator of Campus Information & Reservations

EMERITUS FACULTY

Charles Arnold, Jr., Professor Emeritus, Photographic Arts and Sciences
Bekir Arpag, Professor Emeritus, Printing Management and Sciences
Hans J. Barschel, Professor Emeritus, Art and Design
Edward Brabant, Professor Emeritus, Printing
Evelyn Brandon, Professor Emeritus, Liberal Arts
Harold J. Brennan, Dean Emeritus, College of Fine and Applied Arts
Harold J. Brodie, Professor Emeritus, Mechanical Engineering
Maiy E. Burnet, Professor Emeritus, Business Administration
William Burns, Professor Emeritus, College of Science
Henry Cassia,Associate Professor Emeritus, College of Business
You-Keng Chaing, Professor Emeritus, College of Business
Frank A. Clement, Professor Emeritus, Liberal Arts
Margaret D'Ambruso, Professor Emeritus, College of Science

Silvio DeCrisofaro, Professor Emeritus, College of Continuing Education
Stanley M. Dye, Distinguished Lecturer Emeritus, College of Business
Mark Ellineson, President Emeritus
David Engdahl, Professor Emeritus, Photographic Arts and Sciences
Albert Erskine, Professor Emeritus, College of Science
Dale F. Gibson, Associate Professor Emeritus, Business
Loy Golladay, Professor Emeritus, English, National Technical Institute for the Deaf
Ruth E. Gutfrucht, Professor Emeritus, Art and Design
Sherman Hagberg, Professor Emeritus, Mechanical Engineering
William F. Halbleib, Processor Emeritus, Mechanical Engineering
Frances H. Hamblin, Professor Emeritus, Liberal Arts
A. Ronald Handy, Associate Professor Emeritus, School of Photographic Arts and Sciences
William J. Hayles, Professor Emeritus, College of Science
Edwin O. Henmck, Associate Professor Emeritus, Liberal Arts
Warren L. Hickman, Professor Emeritus, College of Liberal Arts
Richard J. Hoerner, Professor Emeritus, College of Science
Edwina B. Hogadone, Dean Emeritus, College of Business
Alfred Horton, Professor Emeritus, • Printing Management and Sciences
Charles W. Hunt, Associate Professor Emeritus, Printing
Harold Kentner, Professor Emeritus, Continuing Education
Marion L'Amoreaux, Associate Professor Emeritus, Reading and Study Clinic
Alexander S. Lawson, Professor Emeritus, Printing
Douglas Lyttle, Professor Emeritus, Photographic Arts and Sciences
Douglas M. Marshall, Associate Professor Emeritus, Mechanical Engineering
Lane McCord, Associate Professor Emeritus, College of Science
James McMillion, Jr., Professor Emeritus, Photographic Arts and Sciences
Herbert J. Mossien, Professor Emeritus, College of Business
Russell A. Norton, Professor Emeritus, College of Continuing Education
Robert Panara, Professor Emeritus, National Technical Institute for the Deaf
Egidio Papa, Associate Professor Emeritus, Liberal Arts
Robert D. Pease, Dean Emeritus, College of Continuing Education
Daniel Petrizzi, Professor Emeritus, Eisenhower College
James Philbin, Professor Emeritus, College of Liberal Arts
Harold Raphael, Professor Emeritus, Packaging Science
George W. Reed, Professor Emeritus, Electrical Engineering
Albert D. Rickmers, Professor Emeritus, Photographic Arts and Sciences
Donald L. Ritchie, Professor Emeritus, Printing
Donald C. Robinson, Department Head Emeritus, Electrical Engineering
Nile Root, Professor Emeritus, School of Photographic Arts and Sciences
Nina M. Sandberg, Associate Professor Emeritus, College of Science
Julian Salisnjak, Professor Emeritus, Liberal Arts
Roy I. Satre, Vice President for Academic Affairs Emeritus
Gerhard Schumann, Professor Emeritus, Photographic Arts and Sciences
Norris Shea, Professor Emeritus, Liberal Arts
Edward L. Scouten, Professor Emeritus, English, National Technical Institute for the Deaf
Anthony Sears, Professor Emeritus, Printing
Donald Smith, Associate Professor Emeritus, Photographic Arts and Sciences
Leo F. Smith, Vice President Emeritus, Academic Administration
Arnold Sovari, Professor Emeritus, Photographic Arts and Sciences
G. Hollister Spencer, Professor Emeritus, Business Administration
Egon Stark, Professor Emeritus, College of Science
Hector Sutherland, Professor Emeritus, Printing
Vernon R. Titus, Professor Emeritus, Management
Hollis N. Todd, Professor Emeritus, Photographic Arts and Sciences
John Traueer, Professor Emeritus, Photographic Arts and Sciences
Arden L. Travis, Professor Emeritus, College of Business
Clarence E. Tuites, Professor Emeritus, Electrical Engineering
Dr. Vladimir Vukanovic, Distinguished Professor Emeritus, College of Science
Robert Webster, Associate Professor Emeritus, College of Graphic Arts and Photography
Norman J. Weinreber, Associate Professor Emeritus, College of Applied Science and Technology
Mason E. Wescott, Professor Emeritus, Statistics
Helen W. Wheeler, Associate Professor Emeritus, Reading and Study Clinic
Dorothy Widmer, (Professor Emeritus), Student Affairs
Edwin M. Wilson, Professor Emeritus, Photographic Arts and Sciences
Eugene O. Wilson, Associate Professor Emeritus, Business
Viola M. Wilson, Associate Professor Emeritus, Food Administration
Stanley H. Witmeyer, Professor Emeritus, College of Fine and Applied Arts

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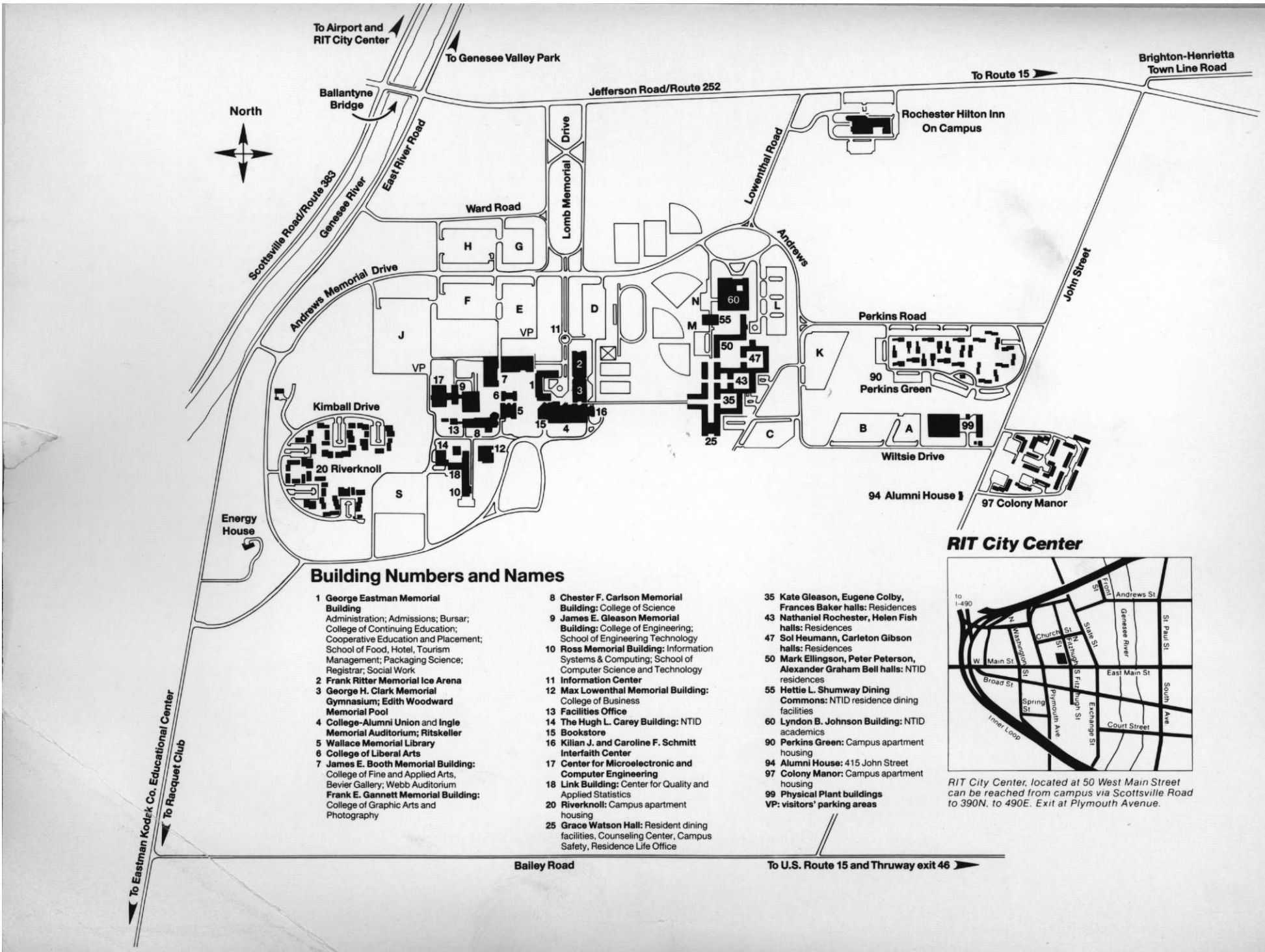

Building Numbers and Names

1 **George Eastman Memorial Building**
Administration; Admissions; Bursar; College of Continuing Education; Cooperative Education and Placement; School of Food, Hotel, Tourism Management; Packaging Science; Registrar; Social Work

2 **Frank Ritter Memorial Ice Arena**

3 **George H. Clark Memorial Gymnasium; Edith Woodward Memorial Pool**

4 **College-Alumni Union** and **Ingle Memorial Auditorium; Ritskeller**

5 **Wallace Memorial Library**

6 **College of Liberal Arts**

7 **James E. Booth Memorial Building:** College of Fine and Applied Arts, Bevier Gallery; Webb Auditorium
Frank E. Gannett Memorial Building: College of Graphic Arts and Photography

8 **Chester F. Carlson Memorial Building:** College of Science

9 **James E. Gleason Memorial Building:** College of Engineering; School of Engineering Technology

10 **Ross Memorial Building:** Information Systems & Computing; School of Computer Science and Technology

11 **Information Center**

12 **Max Lowenthal Memorial Building:** College of Business

13 **Facilities Office**

14 **The Hugh L. Carey Building:** NTID

15 **Bookstore**

16 **Kilian J. and Caroline F. Schmitt Interfaith Center**

17 **Center for Microelectronic and Computer Engineering**

18 **Link Building:** Center for Quality and Applied Statistics

20 **Riverknoll:** Campus apartment housing

25 **Grace Watson Hall:** Resident dining facilities, Counseling Center, Campus Safety, Residence Life Office

35 **Kate Gleason, Eugene Colby, Frances Baker halls:** Residences

43 **Nathaniel Rochester, Helen Fish halls:** Residences

47 **Sol Heumann, Carleton Gibson halls:** Residences

50 **Mark Ellingson, Peter Peterson, Alexander Graham Bell halls:** NTID residences

55 **Hettie L. Shumway Dining Commons:** NTID residence dining facilities

60 **Lyndon B. Johnson Building:** NTID academics

90 **Perkins Green:** Campus apartment housing

94 **Alumni House:** 415 John Street

97 **Colony Manor:** Campus apartment housing

99 **Physical Plant buildings**

VP: visitors' parking areas

RIT City Center

RIT City Center, located at 50 West Main Street can be reached from campus via Scottsville Road to 390N, to 490E. Exit at Plymouth Avenue.